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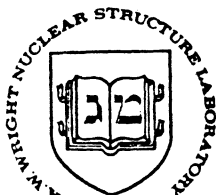
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Yale University

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272 Whitney Avenue, P.O. Box 6666, New Haven, Connecticut 06511

D. Allan Bromley
Henry Ford II Professor
and Director
203-436-3026

*T. F. -
What is your think?*

RECEIVED
SEP 6 1983
PHYSICS TODAY

August 24, 1983

Dr. Harold Davis, Editor
PHYSICS TODAY
American Institute of Physics
333 East 45th Street
New York, New York 10017

Dear Hal:

As you know, I maintain concern that nuclear physics gets adequate coverage in Physics Today. I write at this time to bring to your attention the possibility that two of my former colleagues, Robert J. Ascutto and Ernest J. Seglie, might be invited to prepare a paper on Grazing Collisions of Atomic Nuclei for publication in your journal. I have talked with them about this, and at my request, they have prepared a very general sort of talking outline which I enclose. It actually seems to me that this particular outline is much more appropriate for Scientific American than for Physics Today, but Bob and Ernie are the two guys who, perhaps more than anyone else, contributed to our understanding of these collisions and what they can tell us about the underlying dynamics and structure of nuclei. They can write a very elegant article for you. Since it turns out that both of them have won very significant awards for excellence in teaching and clarity in writing, and I think that you and your people would enjoy working with them.

Although both are excellent nuclear physicists, Bob Ascutto is presently completing his residency in pediatrics at the University of Connecticut Medical Center, and Ernie Seglie is a senior staff officer at the Institute for Defense Analysis in Washington. Together, they were members of the Physics Department here at Yale for a number of years. In Bob Ascutto's case, I made the mistake, as Chairman of the Department, of assigning him to teach medical physics to undergraduates. He became so intrigued by this that he decided to undertake a medical program at our medical school in parallel with his duties as an Associate Professor of Physics. Not only did he score at the top of his entire class but also during his last year of the program, he generated five Physical Review Letters which is no mean feat for someone working full-time at physics. In short, he is a very unusual individual.

S 000001

He and Seglie have worked together for many years and have just completed a major chapter for me as part of a treatise on heavy ion science that Plenum Press is publishing. It will be the definitive work on these grazing collisions for a great many years to come, and it is on that basis that I feel quite confident in recommending them to you for a Physics Today article.

I am contacting you at their request and have told them that I have forwarded the outline to you. If you have some interest in this, just drop me a note or give me a call at 203-436-3026 and I will put you in touch with the two of them directly.

In the meantime I must tell you that Jeff Schmidt did an absolutely outstanding job in editing the paper I had prepared on Neutrons in Science and Technology for presentation at the 40th Anniversary of Fermi's First Reactor at the University of Chicago. I made no changes whatsoever in what he had done. You really do not know how unusual that is because, almost inevitably, I end up having giant hassles with editors who work over my papers. Let me then put in a very strong plug for Jeff.

With warmest personal regards.

Sincerely yours,

*Allan
(encs)*

D. Allan Bromley

DAB:lal

A terrific article!

SB
11/7/98

CATALYSIS AND SURFACE SCIENCE

Excellent
intro.

Great book

In 1835 the Swedish chemist Jöns Jakob Berzelius coined the term "catalysis" to describe chemical reactions in which progress is affected by a substance that is not consumed in the reaction and hence is apparently not involved in the reaction. Both the term and the phenomenon were heavily debated throughout the rest of the 19th century until the German chemist Wilhelm Ostwald proposed a now generally accepted definition: "A catalyst is a substance that accelerates the rate of a chemical reaction without being part of its final products." The catalyst acts by forming intermediate compounds with the molecules involved in the reaction, offering them an alternate, more rapid path to the final products.

Catalysis is of vital importance. In biological systems, enzymes play a catalytic role. In the chemical and petroleum industries, key processes are based on catalysis. And in environmental chemistry, catalysts are essential to breaking down pollutants such as automobile and industrial exhausts.

If the catalyst and the reacting species are in the same phase (for example, liquid), then the process is known as homogeneous catalysis. More relevant in technical processes is heterogeneous catalysis, where the catalyst is a solid and the reacting molecules interact with its surface from the gaseous or liquid phases.¹ The economic significance of heterogeneous catalysis is reflected in the fact that the worldwide market for solid catalysts in the automotive, petroleum and other industries is on the order of \$100 billion per year and growing rapidly.²

Typically, the chemical transformation occurs in a flow reactor through which the reacting species pass. Atoms in the surface of the catalyst may form chemical bonds with atoms in impinging molecules, a phenomenon known as chemisorption. If existing bonds in the molecule break, the process is called dissociative chemisorption. The chemisorbed species are mobile on the surface and may bond to other particles, thus leading to new molecules, which eventually leave the surface (desorb) as the desired reaction products.

Detailed identification and characterization of these elementary processes is hampered, however, by fundamental problems. The reacting systems exist merely as two-dimensional phases for which most of the usual methods

Modern surface physics is transforming the black art of catalysis, revealing a fascinating choreography followed by reacting atoms and molecules.

Gerhard Ertl and Hans-Joachim Freund

of investigation are not well suited, and so researchers have had to develop novel surface-sensitive tools. (See the box on page *****) Furthermore, the surfaces of "real" catalysts are typically rather inhomogeneous. Because their efficiency increases with their total surface area (as long as no diffusion or other limiting transport process is required), finely divided particles are usually applied to a more-or-less inert support material. (See figure 1.) Catalytic activity is often further enhanced by the addition of compounds called promoters.

Making ammonia

The synthesis of ammonia (NH_3) from the elements nitrogen (N_2) and hydrogen (H_2) represents the first—and still one of the most important—large-scale industrial processes based on heterogeneous catalysis.³ This reaction was first realized in 1909 by Fritz Haber, on a laboratory scale. Only four years later, due mainly to work performed by Carl Bosch and Alwin Mittasch, the first industrial plant of Badische Anilin und Soda-Fabrik, one of today's big chemical companies, started operations. Currently, 150 million tons of ammonia are produced per year worldwide, most of which is converted into fertilizer.

The catalyst developed by Mittasch was essentially iron with small amounts of potassium, aluminum and calcium added as promoters. With only minor modification, it is still in use in most ammonia-producing plants. It is only in recent years that catalysts based on supported ruthenium particles with alkali metal promoters have emerged as possible alternatives; they were first proposed by Japanese researchers.

Despite its great complexity, the mechanism of this important reaction can now be regarded as known. The reaction rate can be successfully modeled on the basis of the kinetics of the elementary steps involved, as figure 2 illustrates.⁴

The necessary information was obtained largely by surface science modeling. An actual catalyst is complex, consisting of small solid particles supported on oxide powders exposing various crystal planes, usually with poorly defined composition and morphology. Consequently, model systems must be developed. By "model," we mean real but simple systems. The simplest model system would be a well-defined single crystal surface whose structure may be varied by choosing different surface orientations. Furthermore, by introducing defects and by modifying the crystal's chemical composition, the morphology of the surface may be changed to bridge the material gap between the models and the actual catalyst.

Nice
intro

(BASF)
ok?

Are these
2 different
depts??

GERHARD ERTL is director of the department of physical chemistry, and HANS-JOACHIM FREUND is director of the department of chemical physics, at the Fritz Haber Institute of the Max Planck Society in Berlin.

FIRST PAGES
2 JUN 98

TRENDS IN ELECTROMECHANICAL TRANSDUCTION

Nicely
done

SB 6/2/98

In today's world, it is nearly impossible to avoid contact with electromechanical sensors and actuators over the course of the day, although we rarely recognize them. They drive the keyless entry systems, the light switches that respond to sound or motion, the detectors in cars that determine whether seat belts are fastened and the sound-receiving and sound-generating parts of the telephone, to name just a few examples.

Electromechanical transducers are devices in which one connection to the environment conducts electrical energy and another conducts mechanical energy. Examples include microphones, loudspeakers, accelerometers, strain gauges, resistance thermometers, solenoid valves and electric motors.

There are many ways to categorize transducers. The largest breakdown divides them into sensors and actuators. Transducers used to monitor the state of a system, ideally without affecting that state, are sensors. Transducers that impose a state on a system, ideally without regard to the system load (the energy drained by the system), are actuators. However, this division, although useful, doesn't get to the heart of what makes transducers work.

It is useful to consider transducers from the perspective of energy conversion mechanisms, an approach that also yields two broad classes of devices: those based on geometry and those based on material properties. An example of a geometry-based transducer is a condenser microphone, which is a parallel-plate capacitor with a DC voltage bias between the plates. Sound causes one of the plates to move, thus changing the gap between the plates. This change dynamically alters the capacitance and produces an output voltage. An example of a material property-based transducer is a piezoelectric accelerometer. Piezoelectric materials are those in which there is coupling between the electric field and the mechanical field so that imposed electric fields cause dimensional changes and applied material strains produce voltages. In a piezoelectric accelerometer, acceleration strains the transduction material, giving rise to an electric field that is sensed as a voltage. Of course, these two broad classes may be

The demand for more sophisticated sensors and actuators in industrial equipment and consumer products is behind today's push for new transducer materials and geometries.

By Ilene J. Busch-Vishniac

further refined either in terms of the function of the transducer (for example, sensing fluid flow) or in terms of narrower classes of energy conversion (for example, transduction based on piezoelectricity). The table on page ***** shows the main electromechanical transduction mechanisms. Here the definition of "mechanical" is very liberal, including thermal and optical phenomena.

The 1970s and 1980s brought dramatic changes in electronics and signal processing techniques, but only modest changes in electromechanical transducers. As a result, transducers are commonly the least reliable and most expensive elements in measurement and control systems. For this reason, there is a growing emphasis on the field of transduction, and significant changes are beginning to emerge.

Pervasiveness

In the last few decades, electronics have been incorporated into products of all sorts. Their growth in consumer products has been driven by two phenomena: the public's perception that low-technology (nonelectronic) devices are not as good as high-technology devices, and the push for products with "intelligence."

Low-technology devices whose market is being overtaken by high-technology counterparts range from office equipment such as staplers and pencil sharpeners to kitchen appliances such as juice squeezers. In many cases, we are replacing purely mechanical functions performed under human control by automated electromechanical operations, leading to the introduction of sensors and actuators.

The growing market for intelligent products (those with a decision-making process) comes from the desires to automate some functions that people perform and to add functions that people cannot perform. For instance, although people can control room lights by hand, they often prefer to employ motion or sound detectors and control electronics instead. Examples of intelligent products that extend certain functions beyond standard human performance are smoke detectors, automobile airbags and clothes dryers with autodry cycles.

The growth in transducer markets has been rapid and is predicted to continue on its current pace through the turn of the century. The sensor market alone rose to become a \$5 billion a year industry by 1990, with projections for a \$13 billion worldwide market by the year 2000—an 8% annual growth rate over the decade.¹

ILENE BUSCH-VISHNIAC is Temple Professor of Mechanical Engineering at the University of Texas at Austin and a visiting professor of aerospace and mechanical engineering at Boston University.

— Jeff, this article is very good—
you've brought it a long way. —Steve

2 ND pages
16 Nov. 99

SB

11/17/99

MOTILE BEHAVIOR OF BACTERIA

Escherichia coli is a single-celled organism that lives in your gut. It is equipped with a set of rotary motors, each of which is only 45 nm in diameter and drives a long, thin, helical filament that extends several cell body lengths out into the external medium. The assemblage of motor and filament is called a flagellum. The concerted motion of several flagella enables a cell to swim. A cell can move toward regions that it deems more favorable by modulating the direction of rotation of its flagella. It does this modulation by measuring changes in the concentrations of certain chemicals in its environment (mostly nutrients) and deciding whether life is getting better or worse. Thus, in addition to rotary engines and propellers, *E. coli*'s standard accessories include particle counters, rate meters, and gear boxes. This microorganism is a nanotechnologist's dream. Let us examine the features that make it so, from the perspectives of several scientific disciplines: anatomy, biology (genetics), chemistry, and physics.

What made the discovery of *E. coli* and its properties possible? The tale has two geneeses. One involves light microscopy and begins in the 17th century, when Antoni van Leeuwenhoek first observed swimming bacteria.¹ (See box 1.) The other involves molecular genetics and begins in the 20th century, when Joshua Lederberg demonstrated that bacteria have sex, as evidenced by their genetic recombination.² (See box 2.) Lederberg studied *E. coli* and *Salmonella typhimurium*, two closely related organisms. They are the principal subjects of work now being done on bacterial chemotaxis (the motion of bacteria toward chemical attractants or away from chemical repellents). That work has yielded an important model for understanding organisms' behavior at the molecular level.

Anatomy of *E. coli*

E. coli (like *S. typhimurium*) is a cylindrical organism with hemispherical endcaps (as figure 1 shows). The cell, which weighs only 1 picogram, is about 70% water. Some strains are flagellated and motile; others are nonflagellated and nonmotile. When motile cells are grown in a rich medium (such as salts plus a mixture of amino acids), they swim in the direction of their long axis at a rate of about 35 diameters per second, often changing course but rarely stopping.

The chromosome of *E. coli* consists of a single double-stranded chain of DNA about 700 times longer than the body of the cell. There are 4 639 221 base pairs specifying 4288 genes, most of which encode proteins.³ The functions

E. coli, a self-replicating object only a thousandth of a millimeter in size, can swim 35 diameters a second, taste simple chemicals in its environment, and decide whether life is getting better or worse.

Howard C. Berg

of only about 60% of these genes are known. About 50 different kinds of proteins are required to produce the cell's chemotaxis, roughly half for the assembly of flagella and half for behavioral control.

When *E. coli* grows, it first gets longer and then divides in the middle. In a sense it is immortal, because

the mother cell is replaced by two daughters, essentially identical to the daughters of the previous generation. The molecules of DNA in the members of a given set of descendants are identical except for mutations, which occur spontaneously for a given gene, at the rate of about 10^{-7} per generation.

If well fed and held at the temperature of the human gut (37 °C), *E. coli* can synthesize and replicate everything it needs to make a new copy of itself in about 20 minutes. Thus, if we start at noon today with one cell (and lots of food), by noon tomorrow there will be $2^{72} = 4.7 \times 10^{21}$ cells—enough to pack a cube 17 meters on a side! This replication rate explains why single cells dispersed on the surface of the hard form of nutrient agar soon become mounds of cells (colonies) a millimeter or so in diameter and why, in soft agar, the motile progeny of a single cell soon populate the entire plate.

Genetic analysis

A fully functional cell line, or strain, found in the wild is called a wild type. If a mutant cell is found that is missing a particular function, the gene carrying the mutation is named for that missing function. For example, a *che* gene is one encoding a protein (polypeptide) required for chemotaxis. A cell with such a defect develops flagella and swims, but it does not respond normally to chemical stimuli. The first gene of this type to be identified is called *cheA* (in italics), the second is called *cheB*, and so on through the alphabet. When the protein encoded by the gene is identified, it is called CheA (capitalized and in roman type).

In bacterial chemotaxis, besides the *che* genes, we encounter *fla* genes, so named for their defects in the synthesis of flagella (these genes are now called *flg*, *flh*, *fli*, or *fliJ*, because there turned out to be more than 26). There are also *mot* genes, named for defects in motility, or generation of torque. And there are a variety of genes that specify specific chemoreceptors; one, for example, *tar*, is a gene encoding the chemoreceptor Tar, which is so named because it mediates taxis toward the amino acid aspartate and away from certain repellents. The soft-agar plate shown in box 2 was inoculated with wild-type cells at the top, cells of a *tsr* (the *s* stands for serine) strain at the right, cells of a *tar* strain at the bottom, and cells of a smooth-swimming *che* strain at the left.

HOWARD BERG is a professor of molecular and cellular biology, and of physics, at Harvard University in Cambridge, Massachusetts, and a member of the Rowland Institute for Science.

*This can
open on either a
right or left-hand page.*

*Another excellent article!
—Steve 11/23/99*

First pages
23 Nov. 99

PHYSICS AND THE INFORMATION REVOLUTION


In the fourth century BC, a young man named Pythias was condemned to death by Dionysius, the tyrant of Syracuse, for plotting against him, but Pythias was granted three days' leave to go home to settle his family's affairs after his friend Damon agreed to take his place and be executed should Pythias not return. Pythias encountered many problems but managed to return just in time to save Damon. Dionysius was so struck by this remarkable and honorable friendship that he released them both.

The decades-old friendship between computer technology and physics has also been a remarkable and honorable one, and it, too, has produced salutary results. Present-day experimental and theoretical physicists depend on computing, and have incurred a debt that they have repaid many times over by making fundamental contributions to advances in hardware, software, and systems technologies. (Figure 1 shows an experimental computer and one of its developers.)

In this article, we discuss the physical and economic limits to the geometrical scaling of semiconductor devices that has been the basis of much of the computer industry's progress over the last 50 years. We then look at some of the options that may be available when we come up against fundamental physics barriers sometime after 2010.

Disruptive technology

The first stored-program electronic computer, ENIAC (the Electronic Numerical Integrator and Computer), was built in 1946. A major triumph for vacuum-tube technology, ENIAC could add 5000 numbers in one second. At that rate, it could calculate the trajectory of an artillery shell in only 30 seconds, whereas an expert human with a mechanical calculator would have needed some 40 hours to complete the task. The machine was large (see figure 2)—and expensive. ENIAC . . .

- ▷ Contained 17 468 vacuum tubes
- ▷ Weighed 60 000 pounds
- ▷ Occupied 16 200 cubic feet
- ▷ Consumed 174 kilowatts (233 horsepower) 

The amount of energy ENIAC expended to compute a single shell trajectory was comparable to that of the explosive discharge required to actually fire the shell. ENIAC was still the fastest computer on Earth nine years later, when it was turned off because the US Army could no longer justify the expense of operating and maintaining it.

JOEL BIRNBAUM is chief scientist at Hewlett-Packard, in Palo Alto, California. STANLEY WILLIAMS is *****a" or "the ***** senior principal laboratory scientist at Hewlett-Packard Laboratories.

Quantum physics holds the key to the further advance of computing in the postsilicon era.

Joel Birnbaum and R. Stanley Williams

Even in the early days of ENIAC, though, technologists dreamed of smaller, faster, and far-more-reliable computers. An article by a panel of experts in the March 1949 issue of *Popular Mechanics* confidently predicted that someday a computer as powerful as ENIAC would contain only 1500 vacuum tubes, weigh only 3000 pounds, and require a mere 10 kilowatts of power to operate. Such a machine would be about the size and weight of an automobile, said the experts, with power consumption to match. What was intended to be a bold projection seems quaintly conservative to us now. These days, a palmtop computer is thousands of times more powerful than the ENIAC was.

The reason for the experts' now-laughable error is that their prediction was based on the wrong foundation—reasonable extrapolation of the in-place vacuum-tube technology. The transistor, which had already been invented and represented a disruptive technology—that is, a technology that could totally displace vacuum tubes in computers, as electronic calculators later replaced slide rules—was completely ignored.

By 1949, after 40 years of development, vacuum-tube technology was mature, and the associated manufacturing infrastructure was enormous. In 1938 the vacuum tube had still been a decade away from its ultimate accomplishment. But already there was a significant search for something that would be better: a solid-state switch. The development of that switch required a great deal of basic research, both in materials purification and in device concepts.

Even though transistors as discrete devices had significant advantages over vacuum tubes and progress on transistors was steady during the 1950s, the directors of many large electronics companies believed that the vacuum tube held an unassailable competitive position.

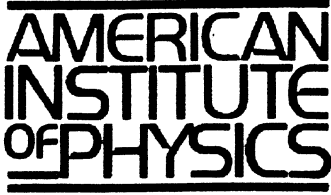
Their companies were eventually eclipsed by the ones that invested heavily in transistor technology R&D and that were poised to exploit new advances. As we shall see, there are eerie parallels with the situation today.

Moore's law

Gordon Moore of Intel Corp was the first to quantify the steady improvement in gate density when he noticed that the number of transistors that could be built on a chip increased exponentially with time. (See figure 3.) Over the past 24 years, that exponential growth rate has corresponded to a factor-of-four increase in the number of bits that can be stored on a memory chip in every device generation of about 3.4 years—an increase of 16 000 times!

This exponential growth in chip functionality is closely tied to the exponential growth of the chip market,

(in



A I P INTER-OFFICE MEMORANDUM

To: Jeffery Schmidt/Physics Today

From: T. C. Braun *TCB* Extension: 2293

Date: 11 February 2000

Subject: Perfect Attendance

CONGRATULATIONS!!!! Our records indicate that you had perfect attendance for the year 1999. In accordance with our present policy, you have earned a cash incentive bonus of \$200 (subject to normal payroll taxes) and two bonus days. The bonus days must be taken within the year 2000 and may not be carried over into 2001. You will receive a separate check on payday, 24 February 2000. We thank you for your perfect attendance and wish you another healthy year in 2000.

I'd like at least one recent research reference. See p. 5 for a possibility.

This reads very well.

First pages
21 Jan. 00

SB
1/23/00

ATMOSPHERIC INFRASOUND

Imagine a world in which you could hear not just nearby conversations and the noise of traffic a few blocks away, but also the sound of blasting in a quarry in the next state, the rumblings of an avalanche or volcano a thousand miles away, and the roar of a typhoon halfway around the world. Fortunately, nature has spared our senses from direct exposure to this incessant din. But our relentless quest to extend our senses has yielded instruments that can do just that—and more. Waves of infrasound, sounds at frequencies too low for us to hear, permeate the atmosphere and offer us insights into natural and human-made events on a global scale.

The term infrasound was coined by following the convention adopted nearly two centuries ago for light waves. The invisible, longer waves below the red end of the visible spectrum were called infrared, and shorter waves beyond the violet end were called ultraviolet. ("Infra" and "ultra" are from the Latin, meaning "below" and "beyond," respectively.) The nominal range of human hearing extends from about 20 Hz to 20 000 Hz, so the inaudible sound waves with frequencies below 20 Hz were dubbed infrasound, while those above the upper limit of 20 000 Hz were named ultrasound. (Many animals can hear beyond the human limits, as described in the box on page *****) Following the optical convention even further, frequencies just below 20 Hz are known as near-infrasound, and frequencies below about 1 Hz are often called far-infrasound. Near-infrasound, if sufficiently intense, is often felt rather than heard—as you might have experienced when you pass cars equipped with "mega-bass" audio systems.

Interest in atmospheric infrasound peaked during the Cold War as one of several ways to detect, locate, and classify nuclear explosions from global distances. Now, the Comprehensive Test Ban Treaty calls for a more sophisticated global sensor network to monitor compliance.¹ There is a need to ensure that tests of clandestine, low-yield nuclear devices can be detected under conditions of noise, cloud cover, or other masking situations underground, underwater, or in the atmosphere. An integrated global sensor array now being deployed would address this problem by coordinating observations from multiple ground-based sensor types, including seismic, hydroacoustic, and infrasonic arrays, working in concert. (See Jeremiah Sullivan's article on the Comprehensive Test Ban Treaty, PHYSICS TODAY, March 1998, page 24.)

In anticipation of a CTBT monitoring system, infra-

The search for ways to monitor compliance with the Comprehensive Test Ban Treaty has sparked renewed interest in sounds with frequencies too low for humans to hear.

Alfred J. Bedard Jr and
Thomas M. Georges

sound research has returned full circle to its origins. In this article, we review the science and technology of atmospheric infrasound, beginning with a brief history of its Cold War beginnings. Our focus, however, is on the richness of Earth's infrasonic environment, unheard and unknown until instruments were built to detect and record it. Practical applications of this new

science are just now being contemplated. (See figure 1, for example.)

A little history

Pressure waves from very powerful explosions may be detected after traveling several times around the Earth. Two famous pre-nuclear instances were the explosion of the Krakatoa volcano in 1883 and the Great Siberian Meteorite of 1909. Following each of these events, sensitive barometers around the world recorded impulsive pressure fluctuations as traces on paper charts. Later, meteorologists collected these charts from stations around the world and, by comparing arrival times, were able to reconstruct the progress of pressure waves radiating outward from the source at the speed of sound, sometimes passing an observing station two or three times.

But these disturbances pale when compared with the political shock waves from the explosion of the first Soviet atomic bomb in 1949. Cold War fears stimulated a flurry of "remote sensing" research—much of it classified—to detect and locate nuclear explosions at global distances. Among the technologies explored during those early years of the Cold War were seismic arrays, electromagnetic (radio to gamma-ray) sensors, and arrays of microphones to listen to very-low-frequency sound waves in the atmosphere.

In the early 1950s, a number of institutions contributed to the successful deployment of a global infrasonic monitoring network. Lewis Strauss, in his book, *Men and Decisions*, describes recording low-frequency air waves at the National Bureau of Standards in Washington, D.C., following a 1954 nuclear test in the Pacific. He took the recording to President Eisenhower and played a sped-up version that made the recording audible. Strauss emphasizes the strategic importance, during those early Cold War years, of nuclear intelligence provided by a worldwide monitoring system that included both remote sensing and a radionuclide sampling program.²

Early defense-driven infrasound research had multiple foci, including mathematical models for the intensity and spectrum of sound waves generated by various kinds of explosions, how these waves propagate long distances through the atmosphere, what kinds of sensors would be best suited for detecting their signatures, and how those signatures could be extracted from a bewildering variety of natural and human-made infrasonic noise. The Limited Test Ban Treaty of 1963, which prohibits testing of

(origins)

(two)

please find a new phrase.

DC

see note on page 5

ALFRED BEDARD is a research scientist at the National Oceanic and Atmospheric Administration's Environmental Technology Laboratory, in Boulder, Colorado. THOMAS GEORGES is a research scientist at the NOAA/Colorado State University Cooperative Institute for Research in the Atmosphere, also in Boulder.

SB
8/27/99

GRAVITATIONAL RADIATION AND THE VALIDITY OF GENERAL RELATIVITY

Nice
article

Observing the speed, polarization, and back influence of gravitational waves would subject Einstein's theory to new tests.

Clifford M. Will

While the detection of gravitational radiation may usher in a new era of "gravitational wave" astronomy (see the accompanying article by Barry Barish and Rainer Weiss, on page *****), it should also yield new and interesting tests of Einstein's general theory of relativity, especially in the radiative and strong-field regimes. Consequently, we are in an unusual situation. After all, we rarely think of *electromagnetic* astronomy as providing tests of Maxwell's theory. Neutrino astronomy may be a closer cousin: We can observe neutrinos to learn about the solar interior or about supernovae, while also checking such fundamental phenomena as neutrino oscillations. To some extent, the usefulness of astronomical observations in testing fundamental theory depends upon how well tested the theory is already. At the same time, since general relativity is the basis for virtually all discussion of gravitational-wave detectors and sources,¹ the extent of its "upfront" validity is of some concern to us.

Although the empirical support for the theory of general relativity is very strong, it is still not as solid as the support for Maxwell's theory, and only in the last 35 years or so have precise tests been feasible. Furthermore, general relativity has not been tested deeply either in its radiative regime or in the regime of strong gravitational fields, such as those associated with black holes or neutron stars. (See figure 1.) Most tests, such as those carried out in the Solar System, check the theory only in its weak-field, slow-motion, nonradiative limit. One famous exception, the Hulse-Taylor binary pulsar, does provide an important verification of the lowest-order radiative predictions of general relativity and is sensitive to some strong-field aspects. Still, important tests of gravitational radiation and its properties remain undone. Furthermore, interesting, well-motivated alternative theories to general relativity still exist that are in agreement with all observations to date. Gravitational-wave tests will remain of interest to us to the extent that they can further constrain the theoretical possibilities.

There are three aspects of gravitational radiation that can be subjected to testing:

▷ The polarization content of the waves (general relativity predicts only two polarization states, whereas other theories predict as many as six).

▷ The speed of the waves (general relativity predicts a speed the same as that of light, whereas other theories predict different speeds).

▷ The back influence of the emitted radiation on the evolution of the source.

In this article, we discuss the three possibilities. First, though, we review the current status of tests of general relativity.^{2,3}

The Einstein equivalence principle

At the heart of gravitational theory is a concept called the Einstein equivalence principle, which modernizes Newton's postulate of the equivalence of gravitational and inertial mass. It states first, that bodies fall with the same acceleration regardless of their internal structure or composition (this piece of the Einstein equivalence principle is called the weak equivalence principle), and second, that the outcome of any local nongravitational experiment is both independent of the velocity of the free-falling reference frame in which it is performed (local Lorentz invariance) and independent of where and when in the universe it is performed (local position invariance).

The Einstein principle implies that gravitation must be described by a theory in which matter responds only to the geometry of spacetime. Such theories are called metric theories. General relativity is a metric theory of gravity, but so are many others, including the "scalar-tensor" theory of Carl Brans and Robert Dicke, a theory based on earlier work by Paul Jordan. Strangely enough, string theory—a leading contender for a unified theory of particle interactions and for a quantum theory of gravity—does not strictly satisfy the metric theory definition. In string theory, matter can respond weakly to gravitation-like fields, in addition to responding to geometry. Consequently, testing the Einstein equivalence principle is a way to search for new physics beyond standard metric gravity.

To test the weak equivalence principle, we can compare the accelerations a_1 and a_2 of two bodies of different composition in an external gravitational field. The resulting measurements will yield the difference in acceleration divided by the average acceleration, $2|a_1 - a_2|/|a_1 + a_2|$, called the Eötvös ratio after Roland, Baron Eötvös of Vásárosnamény, whose pioneering tests of the weak equivalence principle at the turn of the century formed a foundation for general relativity.

The best test so far of the weak equivalence principle has been a series of experiments carried out at the

Spacety

N-dash

CLIFFORD WILL (cmw@wuphys.wustl.edu) is chair of the physics department, and a member of the McDonnell Center for the Space Sciences, at Washington University in St. Louis, Missouri.

From: "Martin L. Perl" <martin@SLAC.Stanford.EDU>
To: Jeff Schmidt <jds@aip.org>
Date: 2 Sep 1997 (Tue) 17:13
Subject: Leptons After 100 Years Article

Dear Jeff

Thank you for changing my ugly duckling of a manuscript into a beautiful swan. You have done a wonderful job.

I have the following comments:

Page 35, column 2: the ***** in "See box 1 on page *****" 36 has not been inserted yet.

Page 39, column 2: the ***** in "See box 2 on page *****" 40 has not been inserted yet.

Page 36, bottom equation in column 2: space required between virtual and Z0.

Page 38, Figure 4: TAU DETECTION scheme might be changed to TAU DETECTION apparatus.

Page 40, Box 2, column i: yes, each h should be an h-bar.

Page 40, References: the names in Ref. 3 are spelled correctly; in Ref. 10 the page number is 2074; in Ref 16 the page number is indeed 79c, it is a conference proceedings and every page has a c added to the page number.

Thank you so much Jeff for all your help and guidance. I am greatly looking forward to the issue.

Sincerely yours

Martin Perl

S 000010

Received: from mailbox.SLAC.Stanford.EDU (root@[134.79.18.29])
by SERV05.SLAC.STANFORD.EDU (PMDF V5.1-7 #16063)
with ESMTP id <01IN64PIHI2W000SYX@SERV05.SLAC.STANFORD.EDU> for jds@aip.org;
Tue, 2 Sep 1997 14:13:39 PDT
Received: from cobra (COBRA.SLAC.Stanford.EDU [134.79.129.50])
by mailbox.SLAC.Stanford.EDU (8.8.5/8.6.11) with SMTP id OAA18977 for
<jds@aip.org>; Tue, 02 Sep 1997 14:13:36 -0700 (PDT)
Date: Tue, 02 Sep 1997 14:13:35 -0700
From: "Martin L. Perl" <martin@SLAC.Stanford.EDU>
Subject: Leptons After 100 Years Article
Sender: martin@SLAC.Stanford.EDU
To: Jeff Schmidt <jds@aip.org>
Message-Id: <340C817F.FF6@slac.stanford.edu>
Organization: SLAC, Stanford University
X-Envelope-To: jds@aip.org
Mime-Version: 1.0
X-Mailer: Mozilla 3.01 (X11; I; AIX 2)
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

S 000011

From: "Martin L. Perl" <martin@SLAC.Stanford.EDU>
To: Jeff Schmidt <jds@aip.org>
Date: 7 Oct 1997 (Tue) 20:33
Subject: (no subject)

Dear Jeff:

The October Physics Today came today. You and your staff have made my manuscript into a wonderful and beautiful article. The color is great. Thank you very much. Indeed the entire issue is great.

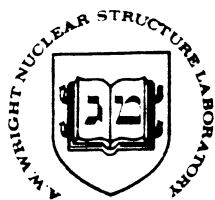
Thanks again and please express my appreciation to Gloria.

Martin Perl

S 000012

Received: from mailbox.SLAC.Stanford.EDU (root@[134.79.18.29])
by SERV05.SLAC.STANFORD.EDU (PMDF V5.1-10 #23033)
with ESMTP id <01IOJ7VBP07600079U@SERV05.SLAC.STANFORD.EDU> for jds@aip.org;
Tue, 7 Oct 1997 17:33:26 PDT
Received: from cobra (COBRA.SLAC.Stanford.EDU [134.79.129.50])
by mailbox.SLAC.Stanford.EDU (8.8.5/8.6.11) with SMTP id RAA00967 for
<jds@aip.org>; Tue, 07 Oct 1997 17:33:24 -0700 (PDT)
Date: Tue, 07 Oct 1997 17:33:23 -0700
From: "Martin L. Perl" <martin@SLAC.Stanford.EDU>
Subject: (no subject)
Sender: martin@SLAC.Stanford.EDU
To: Jeff Schmidt <jds@aip.org>
Message-Id: <343AD4D3.15FB@slac.stanford.edu>
Organization: SLAC, Stanford University
X-Envelope-To: jds@aip.org
Mime-Version: 1.0
X-Mailer: Mozilla 3.01 (X11; I; AIX 2)
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

S 000013



Yale University
A. W. Wright Nuclear Structure Laboratory
272 Whitney Avenue, P.O. Box 6666, New Haven, Connecticut 06511

RECEIVED

FEB 13 1984

PHYSICS TODAY

MS # -

D. Allan Bromley
Henry Ford II Professor
and Director
203-436-3026

February 7, 1984

Harold L. Davis
Physics Today
335 East 45th Street
New York, New York 10017

Dear Hal:

You sent me a copy of a letter from Larry Cranberg dated January 23rd which you were proposing to publish. I am enclosing herewith an answer that you may wish to publish along with the Cranberg letter.

Your people did an excellent job in condensing the paper and I have received many very positive comments concerning it.

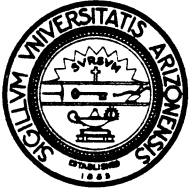
With all best wishes.

Sincerely yours,

DAB:mts

Enc.

S 000014



THE UNIVERSITY OF ARIZONA

TUCSON, ARIZONA 85721

602/621-6970

LUNAR AND PLANETARY LABORATORY

February 22, 1985

Mr. Jeff Schmidt, Assoc. Editor
PHYSICS TODAY
335 E. 45th St.
New York, NY 10017

Dear Jeff:

With this letter I thank you for your help with the article on asteroids and comets in the February issue. I have had much editing experience myself, for the Space Science Series books of the University of Arizona Press, and it is through this training that I can appreciate the exceptional job you have done.

There was a considerable amount of rewriting that you guided me into patiently and the article is much better than my original version. Your thinking through the material and your questions step by step have actually clarified the material for me; where I had made a statement carelessly you would bring me up and bring about a clearer version.

I also admire your patience. Until the very end, with the material already set, I kept asking you for additions and changes because the field is changing so fast. You allowed all of these and I am most grateful.

If you ever want to move out West, we would love to have you at the Press and we could surely use your competence.

With best regards,

Tom Gehrels

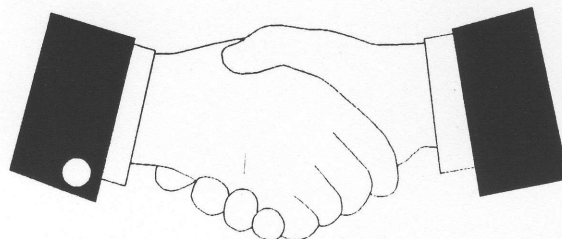
TG/sm

cc: Dr. H. L. Davis

P.S. Would you have a few reprints of the article or a few February issues for me? As we discussed on the phone, I would now like to send this to the Soviet Union where there is an interest in publishing a translated version of the article.

S 000015

AIP INTER-OFFICE MEMORANDUM



To: Jeffrey Schmidt

From: T. C. Braun *TB*

Extension: 2293

Date: February 8, 1999

Subject: Perfect Attendance

CONGRATULATIONS!!!! Our records indicate that you had perfect attendance for 1998. In accordance with our present policy, you have earned a cash incentive bonus of \$200 (subject to normal payroll taxes) and 2 bonus days. The bonus days must be taken within the year and may not be carried over into 2000. You will receive a separate check on payday, ~~25 February 1999~~. We thank you for your perfect attendance and wish you another healthy year in 1999.

1750/1/99
✓

Jeff,

Moses Chan says

"Please thank Jeff for me."

"Thanks" from Moses Chan.

- Steve 7/15/96

From: Toni Feder <tfeder@wam.umd.edu>
To: stephen benka <sbenka@aip.acp.org>
Date: Mon, Oct 5, 1998 7:00 pm
Subject: Praise for Jeff & Gloria

Hi Jeff,

I saw Adrian Parsegian last week one evening when he was in Durham. He spoke extremely highly of you, saying how impressed he was with you, how articulate you are, and how much he enjoyed working with you on his article last year.

Just thought I'd pass this on....

Oh, and while I'm at it, as I already told Gloria, in a conversation with MIT's Hale Bradt last week, he said he was generally impressed by PT, and recalled that some years back, he gave Gloria feedback on a "messed up" draft of a story on pulsars she'd sent him. He continued that he didn't see the article again until it appeared in print, and he was really impressed. "She got all the nuances right. She must be really good. I admire her."

Toni

S 000018

Received: from wilson.acpub.duke.edu
([152.3.233.69])
by acpgate.acp.org; Mon, 05 Oct 1998 18:58:59 -0400
Received: from wam.umd.edu (async251-33.async.duke.edu [152.3.251.33])
by wilson.acpub.duke.edu (8.8.5/Duke-4.6.0) with ESMTTP id SAA08361;
Mon, 5 Oct 1998 18:58:56 -0400 (EDT)
Message-ID: <36194F7D.FCE9A1C6@wam.umd.edu>
Date: Mon, 05 Oct 1998 19:00:18 -0400
From: Toni Feder <tfeder@wam.umd.edu>
Reply-To: tfeder@wam.umd.edu
Organization: Physics Today
X-Mailer: Mozilla 4.04 (Macintosh; I; PPC)
MIME-Version: 1.0
To: jschmidt@aip.acp.org, stephen benka <sbenka@aip.acp.org>,
charris@aip.acp.org, glubkin@aip.acp.org
Subject: Praise for Jeff & Gloria
Content-Type: text/plain; charset=us-ascii; x-mac-type="54455854"; x-mac-
creator="4D4F5353"
Content-Transfer-Encoding: 7bit

S 000019

Thanks for your extra effort...

"Swonnelly's"
ONE TWO ZERO

We appreciate your outstanding performance.

Steve

Cek

S 000021

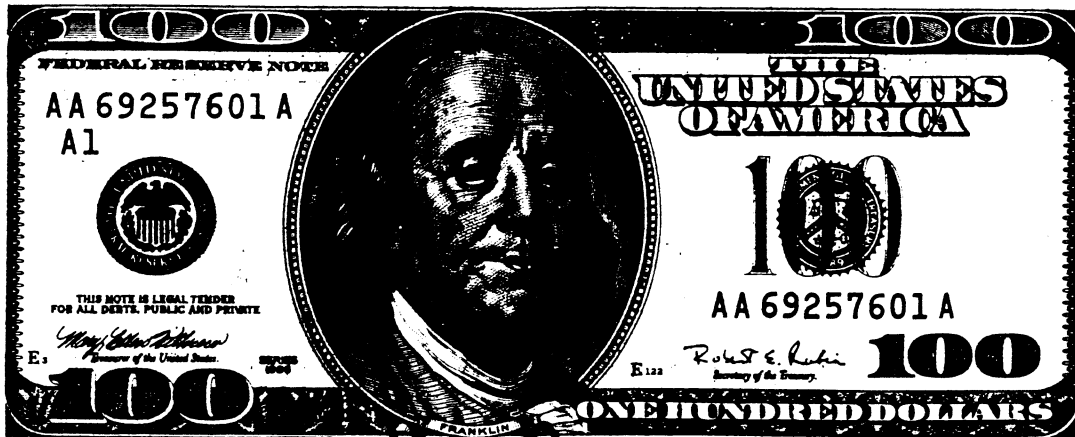
7.7

INTER - OFFICE MEMORANDUM

May 21, 1998

I, Jeffrey Schmidt, hereby acknowledge receipt of a cash "Pat on the Back" award in the amount of \$100. I understand that my year-end pay will reflect a "gross up" of this award.

J. Schmidt 23 May 98
Jeffrey Schmidt DATE



S 000022

Received: from scrutinizer.Rz-Berlin.mpg.de
([141.14.128.16])
by acpgate.acp.org; Tue, 24 Nov 1998 03:08:05 -0500
Received: from fritz-haber-institut.mpg.de (hjf.RZ-Berlin.MPG.DE [141.14.139.54])
by scrutinizer.Rz-Berlin.mpg.de (8.8.8/8.8.8) with ESMTP id JAA13072
for <jschmidt@aip.acp.org>; Tue, 24 Nov 1998 09:07:53 +0100 (MET)
Message-ID: <365A69BC.1835DB53@fritz-haber-institut.mpg.de>
Date: Tue, 24 Nov 1998 09:09:32 +0100
From: HJ Freund <freund@fritz-haber-institut.mpg.de>
X-Mailer: Mozilla 4.5 [en] (WinNT; I)
X-Accept-Language: en
MIME-Version: 1.0
To: jschmidt@aip.acp.org
Subject: Physics Today
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

S 000025

University of Illinois
at Urbana-Champaign

Department of Physics

Loomis Laboratory of Physics
1110 W. Green Street
Urbana, Illinois 61801

James P. Wolfe

Telephone: (217) 333-2374
Telefax: (217) 244-2278
E-Mail: j-wolfe@uiuc.edu

October 20, 1995

Jeff Schmidt
Physics Today
One Physics Ellipse
College Park MD 20740-3843

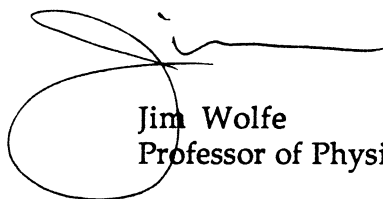
Dear Jeff,

Thanks for returning the graphics materials. It was a real pleasure working with you on the article. You and your staff did a terrific job.

I recently received a phone call from one of the organizers of the Acoustical Society Meeting (November, St. Louis) with a request to submit some of the "stunning" photos in Physics Today to their first Gallery of Acoustics. It is exciting to publish an article which has appeal to experts as well as (hopefully) the general reader.

I will look forward to working with you in the future.

Sincerely,

A handwritten signature in dark ink, appearing to be 'Jim Wolfe', with a large, stylized loop at the end.

Jim Wolfe
Professor of Physics

S 000026

From: "George Crabtree" <george_crabtree@qmgate.anl.gov>
To: "Judy Barker" <jbarker@aip.acp.org>
Date: 15 Apr 1997 (Tue) 19:24
Subject: Vortex Article

Subject: Vortex Article
Time: 5:26 PM
Date: 4/15/97

Dear Steve, Jeff, Barbara, and Judy,
I just received the offprints for our article on Vortex Physics in the April issue of Physics Today. What fast service! The article looked very good in the magazine, and I got a warm feeling on finally seeing it in print. Thanks to all of you for your efficient and competent efforts to bring the article out. For David and me, it is gratifying to see the fruits of our work appear with such high production standards. Thank you all once again.
Sincerely,
George Crabtree

George Crabtree - MSD/223
Argonne National Laboratory
9700 S. Cass Avenue
Argonne, IL 60439
phone: 630-252-5509
fax: 630-252-7777
e-mail: crabtree@anl.gov

CC: "David Nelson" <nelson@cmt.harvard.edu>

S 000027

Received: from qmgate.anl.gov (qmgate.anl.gov [146.137.160.48]) by dns2.anl.gov (8.6.11/8.6.11) with SMTP id SAA13148; Tue, 15 Apr 1997 18:26:25 -0500
Message-Id: <n1350993755.29032@qmgate.anl.gov>
Date: 15 Apr 1997 18:24:11 -0500
From: "George Crabtree" <george_crabtree@qmgate.anl.gov>
Subject: Vortex Article
To: "Judy Barker" <jbarker@aip.acp.org>, "Steve Benka" <steveb@aip.org>, "Barbara Levi" <bgl@aip.org>, "Jeff Schmidt" <jds@aip.org>
Cc: "David Nelson" <nelson@cmt.harvard.edu>
X-Mailer: Mail*Link SMTP-QM 4.0.0

S 000028

From: Stephen Benka
To: jeff
Date: 15 Jul 1998 (Wed) 12:34
Subject: A call from Segev

Jeff,

I just spoke with Moti Segev, who is very appreciative of your efforts on his article. He's quite happy with the result.

Well done.

--Steve

S 000029

From: Stephen Benka
To: CHARRIS, BRODSKY, horst
Date: 13 Oct 1997 (Mon) 11:44
Subject: Some strong praise

Charles, Marc, Horst,

Here's some strong praise for Graham and Jeff:

From: <LANDAUE@watson.ibm.com>
To: ACP.AIP(gcollins)
Date: 10/8/97 1:44pm
Subject: Your discussion of Grover's algorithm in the latest issue.

Dear Graham,

First of all, a splendid exposition. Am I too honest if I admit that your box actually helped me? And your item correctly stressed that this is the algorithm that may point the way to how we may really want to use quantum computation. Furthermore you pointed to the perils of decoherence. . .
Regards, Rolf

From: Martin L. Perl <martin@SLAC.Stanford.EDU>
To: Jeff Schmidt <jds@aip.org>
Date: 7 Oct 1997 (Tue) 20:33
Subject: (No subject).

Dear Jeff:

The October Physics Today came today. You and your staff have made my manuscript into a wonderful and beautiful article. The color is great. Thank you very much. Indeed the entire issue is great.

Thanks again and please express my appreciation to Gloria.

Martin Perl

CC: gcollins, jeff, glubkin

S 000030

From: "Johnson, Anthony" <johnsona@ADM.NJIT.EDU>
To: "jschmidt@aip.org" <jschmidt@aip.org>
Date: Sat, Apr 8, 2000 5:23 PM
Subject: Physics Today article

Dear Jeff:

I now have the galleys and I am quite impressed with how quickly you put together the two pieces. I am also quite happy with the editing of my submission. I only have one question and suggested minor change. The first paragraph of the article: The number of jobs posted that I received from Ed Goldin, shortly after the OFC conference was 2000. Is it safe to assume that the 3400 number that you are using is the updated number and not a typo? If all is well then this is an even more dramatic sign of opportunity in the field and warrants more accentuation. I suggest italics and an exclamation point for the following: " ... 11 jobs per seeker!"

You've done a wonderful job and I have no further changes or comments. I will be visiting the School of Optics at the University of Central Florida on Monday and Tuesday and if you should need to get hold of me for some reason, my hosts are Professors Eric Van Stryland and George Stegeman. The Administrative Assistant at the School of Optics is Sarah Pimentel (Tel: 407-823-6916).

Best Regards,

Anthony

CC: "sbenka@aip.org" <sbenka@aip.org>, "Crawley, Re...

S 000031

Dr. Anthony M. Johnson, Chairperson & Distinguished Professor
Department of Physics
New Jersey Institute of Technology
Room 468 Tiernan Hall
161 Warren Street
Newark, NJ 07102-1982
Tel: 973-596-3531; Ultrafast Phenomena Lab: 973-642-7144
FAX: 973-596-5794(Dept.); 973-642-4874(Private, Optics Letters)
Asst. to Chair: Mrs. Renee Crawley -- 973-596-3567 <crawley@ADM.njit.edu>
Email: johnsonA@ADM.njit.edu
Homepage: <http://physics.njit.edu/~johnson/>
Minorities in Science Homepage: <http://www.csy.com/DrAnthonyJohnson.htm>
Editor-in-Chief, OPTICS LETTERS (11/95-12/01)
2000 Vice President of the OPTICAL SOCIETY OF AMERICA (OSA)

S 000032

Received: from pinet.aip.org
([192.58.150.10])
by aip.org; Sat, 08 Apr 2000 17:23:55 -0400
Received: from adm.njit.edu (adm.njit.edu [128.235.184.76])
by pinet.aip.org (8.9.1a/8.9.1) with ESMTP id RAA24639;
Sat, 8 Apr 2000 17:24:18 -0400 (EDT)
Received: by adm.njit.edu with Internet Mail Service (5.5.2650.21)
id <H8VJ8XY6>; Sat, 8 Apr 2000 17:23:43 -0400
Message-ID: <E7DB63F7BA58D21195DD0000D110ADE001779A45@adm.njit.edu>
From: "Johnson, Anthony" <johnsona@ADM.NJIT.EDU>
To: "jschmidt@aip.org" <jschmidt@aip.org>
Cc: "sbenka@aip.org" <sbenka@aip.org>,
"Crawley, Renee"
<Crawley@ADM.NJIT.EDU>,
"Johnson, Anthony" <johnsona@ADM.NJIT.EDU>
Subject: Physics Today article
Date: Sat, 8 Apr 2000 17:23:42 -0400
MIME-Version: 1.0
X-Mailer: Internet Mail Service (5.5.2650.21)
Content-Type: multipart/mixed;
boundary="-----_NextPart_000_01BFA1A0.B6EEE6D4"

S 000033

From: "Johnson, Anthony" <johnsona@ADM.NJIT.EDU>
To: "Jeff Schmidt" <jschmidt@aip.org>
Date: Sun, Apr 9, 2000 3:03 PM
Subject: RE: Physics Today article -Reply

Dear Jeff:

Yes, of course leave the sentence as it stands -- I nearly forgot about the conservative nature of Physics Today. I really had my doubts about getting this done in time for the May issue, but you pulled it off!

Best regards

Anthony

-----Original Message-----

From: Jeff Schmidt
To: johnsona@ADM.NJIT.EDU
Cc: jschmidt@aip.org
Sent: 4/9/00 5:38 AM
Subject: Physics Today article -Reply

Dear Anthony:

Thanks for the quick turn-around on the page proofs. We will probably send the article to the printer while you are in Florida.

Yes, 3400 is the updated number. The Physics Today style is rather low-key, and so we try to avoid using italics for emphasis unless it is necessary for clarity. And we try not to use exclamation points for emphasis; we reserve them for actual exclamations, such as "Hmmm!" The paragraph containing the sentence in question already has an exclamation point (in the first line). I think the dash adds just the right amount of emphasis. The significance of "11 jobs per seeker" isn't going to be lost on any of our readers. So I would like to let the sentence stand as it is. Would that be ok?

Thank you again for an interesting and lively article.

Jeff

S 000034

CC: "sbenka@aip.org" <sbenka@aip.org>, "Crawley, Re...

Received: from pinet.aip.org
([192.58.150.10])
by aip.org; Sun, 09 Apr 2000 15:04:15 -0400
Received: from adm.njit.edu (adm.njit.edu [128.235.184.76])
by pinet.aip.org (8.9.1a/8.9.1) with ESMTP id PAA29080;
Sun, 9 Apr 2000 15:04:39 -0400 (EDT)
Received: by adm.njit.edu with Internet Mail Service (5.5.2650.21)
id <H8VJ8Y5Z>; Sun, 9 Apr 2000 15:04:04 -0400
Message-ID: <E7DB63F7BA58D21195DD0000D110ADE001779A47@adm.njit.edu>
From: "Johnson, Anthony" <johnsona@ADM.NJIT.EDU>
To: "Jeff Schmidt" <jschmidt@aip.org>
Cc: "sbenka@aip.org" <sbenka@aip.org>,
"Crawley, Renee"
<Crawley@ADM.NJIT.EDU>,
"Johnson, Anthony" <johnsona@ADM.NJIT.EDU>
Subject: RE: Physics Today article -Reply
Date: Sun, 9 Apr 2000 15:03:55 -0400
MIME-Version: 1.0
X-Mailer: Internet Mail Service (5.5.2650.21)
Content-Type: text/plain;
charset="iso-8859-1"

S 000035

From: "Jeff Schmidt" <jschmidt@aip.acp.org>
To: ACP.AIP(sbenka)
Date: Mon, Sep 27, 1999 3:43 AM
Subject: Compliment from Jerry Bernholc

Steve --

I got this nice note from Jerry Bernholc.

-- Jeff

>>> Jerry Bernholc <bernholc@ncsu.edu> 09/26/99 04:15pm >>>

Thank you very much for your help with the article and for your excellent editing job! I have already received quite a few nice comments. A number of people remarked that it was very well written.

CC: ACP.AIP(JSCHMIDT)

S 000036

Received: from acpgate.acp.org
([149.28.226.101])
by acpgate.acp.org; Mon, 27 Sep 1999 03:46:41 -0400
Received: from ACP-Message_Server by acpgate.acp.org
with Novell_GroupWise; Mon, 27 Sep 1999 03:46:41 -0400
Message-Id: <s7eee8a1.080@acpgate.acp.org>
X-Mailer: Novell GroupWise 5.2
Date: Mon, 27 Sep 1999 03:43:30 -0400
From: "Jeff Schmidt" <jschmidt@aip.acp.org>
To: sbenka@aip.org
Cc: JSCHMIDT@aip.acp.org
Subject: Compliment from Jerry Bernholc
Mime-Version: 1.0
Content-Type: text/plain; charset=US-ASCII
Content-Disposition: inline

S 000037

From: Stephen Benka
To: Jeff Schmidt
Date: Mon, Sep 27, 1999 11:02 AM
Subject: Re: Compliment from Jerry Bernholc

It's a good feeling, isn't it? He sent me a nice note as well.

>>> Jeff Schmidt 09/27 3:43 AM >>>
Steve --

I got this nice note from Jerry Bernholc.

-- Jeff

>>> Jerry Bernholc <bernholc@ncsu.edu> 09/26/99 04:15pm >>>

Thank you very much for your help with the article and for your excellent editing job! I have already received quite a few nice comments. A number of people remarked that it was very well written.

S 000038

From: Jerry Bernholc <bernholc@ncsu.edu>
To: "Jeff Schmidt" <jschmidt@aip.acp.org>
Date: Sun, Sep 26, 1999 4:15 PM
Subject: Thanks for your help!

Dear Jeff,

Thank you very much for your help with the article and for your excellent editing job! I have already received quite a few nice comments. A number of people remarked that it was very well written.

I noted one misprint, or rather a mistake. "Alex Seattle" should have been "Alex Zettl." Most likely, a spelling checker changed "Zettl" to "Seattle." Would it be possible to run a correction? Please let me know, since I would also like to apologize to Alex. Thank you very much.

Regards,

Jerry

S 000039

Received: from tick.physics.ncsu.edu

([152.1.119.76])

by acpgate.acp.org; Sun, 26 Sep 1999 16:20:00 -0400

Received: from bernhol1 (adsl-77-240-136.rdu.bellsouth.net [216.77.240.136]) by tick.physics.ncsu.edu (AIX4.3/UCB 8.7/8.7) with ESMTP id QAA24450 for <jschmidt@aip.acp.org>; Sun, 26 Sep 1999 16:14:30 -0400 (EDT)

Message-Id: <4.2.0.58.19990926161421.00b677e0@nemo.physics.ncsu.edu>

X-Sender: bernholc@nemo.physics.ncsu.edu

X-Mailer: QUALCOMM Windows Eudora Pro Version 4.2.0.58

Date: Sun, 26 Sep 1999 16:15:25 -0400

To: "Jeff Schmidt" <jschmidt@aip.acp.org>

From: Jerry Bernholc <bernholc@ncsu.edu>

Subject: Thanks for your help!

Mime-Version: 1.0

Content-Type: text/plain; charset="us-ascii"; format=flowed

S 000040

From: Jerry Bernholc <bernholc@ncsu.edu>
To: "Jeff Schmidt" <jschmidt@aip.acp.org>
Date: Fri, Jul 30, 1999 12:11 PM
Subject: proofs

Hi Jeff --

You did a great job editing the article! Thank you very, very much!

I went carefully through the proofs and have only very minor changes to suggest. As you requested, I am putting it all into email so that it is easy to forward to the appropriate person.

I will get to the caption soon and you will have it by Monday morning.

-- Jerry

-
1. p. 24, left panel, move the superscript 1 to the end of the fifth line from the bottom, i.e., this line should end with "(DFT),1" and the superscript "1" should be removed from the first line of the right panel.
 2. p. 24, right panel, add "(see figure 1)" in the middle paragraph after "new solid C60" Do not add "(See figure 1.)" at the end of this sentence, as currently marked on the proofs.
 3. Page 25 top line left (optional change). Change "That process" to "This process"
 4. Page 25, marks in margin. Change "*" , page 40.)" to "*" , page 40, and ref. 4.)" Remove the superscript 4 at the end of the previous sentence.
 5. Page 25, close to bottom, left panel. It says before the enumeration: "plane waves can be used as a basis set." The next sentence starts with "Using them" The following sentence also says "*" using them makes the results". "Using them" is repeated too many times, and maybe this can be changed.
 6. Page 26 left panel, second paragraph, second sentence. Replace "and it has been possible" with "but Alex Seattle's group (also at Berkeley) was able"
 7. Page 27, left panel, second paragraph, first word (optional change). Change "That" to "This"
 8. Page 28, right panel, second paragraph. Move superscript "10" to after "the grid based methods"
 9. Page 28, left panel, second paragraph, third sentence. Change "However, because nanotubes" to "However, because currently made nanotubes"
 10. Page 28, left panel, second paragraph, fourth sentence. Change "forthcoming" to "available at the time"
 11. Page 29, caption to figure 5, last sentence. Change "researchers" to "Fattebert and Marco Buongiorno Nardelli"
 12. Page 29, left panel, line 10. Change "his coworkers" to "Mark Hybertsen"

Regarding changes 3 and 7 ("that" vs. "this"), we may have a difference of opinion. Since I was not born in this country, I asked my wife, who long time ago was a technical copy editor for Plenum. (She is a biostatistician now.) She also liked "this" better. However, I am leaving the final decision to you.

S 000041

Received: from nemo.physics.ncsu.edu
([152.1.119.80])
by acpgate.acp.org; Fri, 30 Jul 1999 12:11:16 -0400
Received: from bernhol1 (adsl-77-242-74.rdu.bellsouth.net [216.77.242.74])
by nemo.physics.ncsu.edu (8.8.7/8.8.7) with ESMTP id IAA24207
for <jschmidt@aip.acp.org>; Fri, 30 Jul 1999 08:12:17 -0400
Message-Id: <4.2.0.58.19990730120738.00b2e2e0@nemo.physics.ncsu.edu>
X-Sender: bernholc@nemo.physics.ncsu.edu
X-Mailer: QUALCOMM Windows Eudora Pro Version 4.2.0.58
Date: Fri, 30 Jul 1999 12:11:20 -0400
To: "Jeff Schmidt" <jschmidt@aip.acp.org>
From: Jerry Bernholc <bernholc@ncsu.edu>
Subject: proofs
In-Reply-To: <s7a0488b.006@acpgate.acp.org>
Mime-Version: 1.0
Content-Type: text/plain; charset="iso-8859-1"; format=flowed
Content-Transfer-Encoding: quoted-printable
X-MIME-Autoconverted: from 8bit to quoted-printable by nemo.physics.ncsu.edu id IAA24207

S 000042

From: "Jeff Schmidt" <jschmidt@aip.acp.org>
To: ACP.AIP(sbenka)
Date: Tue, Aug 3, 1999 11:50 AM
Subject: The Bernholc article

Steve --

Thank you for checking the Bernholc article promptly. I'm glad you liked it. Jerry Bernholc was pleased, too (see below).

-- Jeff

>>> Jerry Bernholc <bernholc@ncsu.edu> 07/30 12:11 PM >>>

Hi Jeff --

You did a great job editing the article! Thank you very, very much!

I went carefully through the proofs and have only very minor changes to suggest....

CC: ACP.AIP(JSCHMIDT)

S 000043

Received: from acpgate.acp.org
([149.28.226.101])
by acpgate.acp.org; Tue, 03 Aug 1999 11:50:54 -0400
Received: from ACP-Message_Server by acpgate.acp.org
with Novell_GroupWise; Tue, 03 Aug 1999 11:50:54 -0400
Message-Id: <s7a6d79e.021@acpgate.acp.org>
X-Mailer: Novell GroupWise 5.2
Date: Tue, 03 Aug 1999 11:50:44 -0400
From: "Jeff Schmidt" <jschmidt@aip.acp.org>
To: sbenka@aip.org
Cc: jschmidt@aip.acp.org
Subject: The Bernholc article
Mime-Version: 1.0
Content-Type: text/plain; charset=US-ASCII
Content-Disposition: inline

S 000044

From: "Clifford M. Will" <cmw@howdy.wustl.edu>
To: ACP.AIP(JSCHMIDT)
Date: Tue, Aug 31, 1999 1:57 PM
Subject: My Article

Jeff:

The article looks great! Thanks. Below are my comments:

[convention: x.y.z means page x, column y, line z; -z means z from the bottom]

38.2.2: should read "whereas other theories may predict different speeds." The "may" is important.

39.1.-9: "clock anisotropy" is incorrect in this context. How about "The best test of this principle to date ...", or "The best test of local position invariance to date ...", or simply "The best test to date...". Your choice.

39.2.9 and 39.2.13: Why no "The" in PPN formalism? Everybody says "The PPN formalism". It sounds strange without the "the".

40.1.1: should read "ranging, planetary and satellite tracking tests" -- delete the comma after planetary.

42.2.35: change to "and the European instrument known as VIRGO"

42.2.19: To answer the question, the strong/weak issue in duality in string theory is a different one than here. I believe that the use of "only" in this context is a safe one.

42.2.References: I believe that the SLAC proceedings are to be published by SLAC itself as a report, not by a standard book publisher. If this means using the terminology "unpublished", fine.

My only serious problem is with the rendition of Figure 5. The inspiral waveform on the left of the merger does not show the required increase of frequency, which is crucial, and also appears asymmetrical about the horizontal axis. The correct curve (apart from overall scale) can be generated simply from the formula (which happens to be the correct, lowest-order formula):

$$f(t)=(-50-t)^{-1/4}*\cos(2*(-50-t)^{5/8});$$

and then plotted from $t=-500$ to $t=-51$.

S 000045

A simple Maple program to do this, as well as to plot the Ringdown waveform is reproduced below:

```
f:=t->(-50-t)^(-1/4)*cos(2*(-50-t)^(5/8));
g:=t->0.6*exp(-(t-50)/40)*cos((t-50)/10);
with(plots):
p1:=plot({f(t)},t=-500..-51,linestyle=0,thickness=2,color=red):
p2:=plot({g(t)},t=50..200,linestyle=0,thickness=2,color=red):
```

```
plots[display]({p1,p2},axes=None);
```

An artist could then trace over the curves, if necessary. I'm sorry to do this, but every reader who knows about this subject will take one look at Fig. 5 and say "Wrong!". I've also attached a postscript file of the curves generated by these formulas.

Has a cover picture been selected for the issue? If it relates to LIGO, I might choose to order offprints with the magazine cover. If not, I would opt for the generic cover.

Thanks again!
Cliff

CC: "Clifford M. Will" <cmw@howdy.wustl.edu>

S 000046

Received: from howdy.wustl.edu
([128.252.125.54])
by acpgate.acp.org; Tue, 31 Aug 1999 13:58:11 -0400
Received: (from cmw@localhost)
by howdy.wustl.edu (8.9.3/8.9.3) id MAA23670;
Tue, 31 Aug 1999 12:57:57 -0500 (CDT)
Date: Tue, 31 Aug 1999 12:57:56 -0500 (CDT)
From: "Clifford M. Will" <cmw@howdy.wustl.edu>
To: jschmidt@aip.acp.org
cc: "Clifford M. Will" <cmw@howdy.wustl.edu>
Subject: My Article
Message-ID: <Pine.SUN.3.91.990831121803.19174I-101000@howdy.wustl.edu>
MIME-Version: 1.0
Content-Type: MULTIPART/MIXED; BOUNDARY="1918925340-1140979462-936122276=:19174"

S 000047

From: "Ross, Ian (Ian)** CTR **" <iross@lucent.com>
To: "'Jeff Schmidt'" <jschmidt@aip.acp.org>
Date: 11 Oct 1997 (Sat) 5:10
Subject: RE: Closure

Jeff,

Thanks for all your effort. It was a pleasure to work with you.

Ian

COPIES GIVEN TO
HARRIS & BENKIN
15 OCT. 97.

S 000048

From: Stephen Benka
To: jeff
Date: 5 Feb 1998 (Thu) 20:15
Subject: Sullivan & Barth

Jeff,

I've gone through both articles, and left them on your chair with my notes.

I think they make a great package for our readers. Thanks for your help getting them done in time.

--Steve

S 000049

From: Stephen Benka
To: JSCHMIDT, bgl
Date: 14 Feb 1997 (Fri) 17:24
Subject: Thought you'd like to know

Jeff, Barbara,

I just got a visit from my PhD advisor, who had a major complaint about about December issue. The Sikivie and Amato articles were "too damn good" and he spent far too much time with the magazine.

I thought you'd like to know. Kudos to you both.

--Steve

S 000050

FAX COVER SHEET

To: Dr. Steve Benka

From: Daniel Kleppner

M.I.T., room 26-237

Cambridge, MA. 02139

phone: (617) 253-6811

FAX : (617) 253-4876

Internet: DK@kleppner.mit.edu

Date Wed Nov 22 13:31:33 EST 1995

Pages (Including cover): 3

To everyone:

Here is another in an occasional series of comments from our Advisory Committee.

Recall, that I was asked by them to nag them monthly, and I do. I don't generally circulate those comments ~~the~~ received that are not constructive.

S 000051

— Steve

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
DEPARTMENT OF PHYSICS

DANIEL KLEPPNER
Lester Wolfe Professor of Physics

address: MIT
room 26-237
Cambridge, MA 02139

phone: 617/253-6811
fax: 617/253-4876
dk@amo.mit.edu

November 22, 1995

Dr. Stephen G. Benka
American Institute of Physics

Dear Steve,

I am sorry to be tardy in giving you feedback on PT, but let me start to catch up by commenting on the October issue. I will not comment on every item on your list, only on topics for which I have something to say.

General: the issue strikes me overall as strong. The cover is spectacular (though the title "sounding out the sun" is a trifle cutesy- particularly since one looks rather than listens), and the balance of articles is excellent- encompassing physics, geophysics, and biography.

PHYSICS UPDATE: interesting topics. However, the opening line "A silicon device for triggering a nerve cell has been constructed...." is pretty dull, as is invariably the case with the passive. The other reports have a zippier style. The AC suggested better graphical design for the page. One thought- develop a set of small logos- say for quantum mechanics, medical physics, materials, etc.- that would give a quick identification of the area while also adding visual interest. These could be small and placed in the margin. You might run a design contest to get suggestions from the readers. That could be done electronically. You would have to think carefully whether it is worth the effort, but it might drum up reader interest.

REFERENCE FRAME. Preachy.

S 000052

LETTERS: The letter of Seaborg et al demolishes Gabbard's hypothesis, which raises the question of how Gabbard's letter got published in the first place. I haven't gone back to read it, but even Gabbard now disowns it. A more rigorous scientific review of his letter would have saved confusion. More seriously with respect to this column, the letters of Hayden, Ravnik and Cohen take up lots of space and do not add anything new. Your readers should not be led, as I was, to read a long correspondence and then find that most of it is simply overkill. In my opinion, PT should have published the Seaborg letter, a brief note to say that Hayden, Ravnik and Cohen had come to similar conclusions, and Gabbard's reply.

Ershkovich's letter on Sagdeev reinforces my view that Alpert's attack on Sagdeev was irresponsible and that PT was irresponsible in publishing it.

ARTICLE- QUANTUM INFORMATION...: This is a fascinating topic and Bennett writes with great authority. However, I must confess that I found it too difficult to follow. Perhaps that is the nature of the beast. However, the graphics are attractive and that always makes one feel friendlier.

ARTICLE- HELIOSEISMOLOGY. Once again, the topic is fascinating. In this case I thought that I could understand it, but the text did not grip me. Too often it turned into a catalog of facts. ("Three ground-based networks of imaging helioseismological instruments are in various stages of development.")

ARTICLE- SCHWINGER. I saw this paper in the manuscript stage and thought that it was very disappointing. However, in PT it is absolutely first rate. The pictures, particularly Rabi, Schwinger and Weisskopf, add a great deal, the title was improved, and I suspect there was some editing. In any case, I enjoyed this immensely.

CAREER CHOICES. This is an excellent article, interesting in its own right and perfect for its goal of letting young physicists know the range of possibilities open to them.

BOOKS: The BEC volume is most timely, and makes a good headline for the section. The report of the Internet book points out that the book will be out of when the reader sees the review. Although the topic is pedestrian, the report provides a useful service. The new Feynman biography sounds pretty good but I question the need for yet another book. The review is relatively long. I would have opted for a briefer report. The book "Electric and Magnetic Interactions" is an undergraduate text. PT cannot hope to keep up with this category and should, in my opinion, leave it to AJP, which regularly reviews texts.

WE HEAR THAT: I am glad to hear of what is going on. I know that this column is not everyone's cup of tea, but it is mine.

OBITUARIES: The Ford obituary was extremely interesting to me. I knew Ford professionally but was never clear on what he had really done. He was somewhat of a joker which helped to obscure his accomplishments. The obituary is excellent. The other obituaries were also interesting to me as human documents. It is too bad that these stories must be told in a lugubrious context but I can't think of a suitable alternative.

I hope that these comments are useful. I will try to do the same for the November issue. However, if there are items for which you particularly want feedback, let me know and I will be sure to cover them.

Sincerely,



S 000053

From: Kai-Henrik Barth <barth002@tc.umn.edu>
To: Jeff Schmidt <jschmidt@aip.acp.org>
Date: 21 Apr 1998 (Tue) 11:05
Subject: reprints received

Dear Jeff,

I just came back from Europe and found the reprints of my article waiting for me on my desk in my university office. Thanks again for all your effort and time. I am very happy with the final product.

All the best
Kai

--

Kai-Henrik Barth
Program in History of Science and Technology
435 Walter Library
University of Minnesota
Minneapolis, MN 55455
612-626-8722 612-872-9323 (home)
barth002@tc.umn.edu
<http://umn.edu/home/barth002/>

S 000054

Received: from mhub3.tc.umn.edu
([128.101.131.53])
by acpgate.acp.org; Tue, 21 Apr 1998 11:00:45 -0400
Return-Path: <barth002@tc.umn.edu>
Received: from pub-14-a-14.dialup.umn.edu by mhub3.tc.umn.edu; Tue, 21 Apr 98 10:00:42
-0500
Message-ID: <353CB599.433A9860@tc.umn.edu>
Date: Tue, 21 Apr 1998 09:05:00 -0600
From: Kai-Henrik Barth <barth002@tc.umn.edu>
Reply-To: Kai H Barth <barth002@tc.umn.edu>
Organization: University of Minnesota
X-Mailer: Mozilla 4.01 (Macintosh; I; PPC)
MIME-Version: 1.0
To: Jeff Schmidt <jschmidt@aip.acp.org>
Subject: reprints received
X-Priority: 3 (Normal)
Content-Type: text/plain; charset=us-ascii; x-mac-type="54455854";
x-mac-creator="4D4F5353"
Content-Transfer-Encoding: 7bit

S 000055

PHYSICS TODAY

from Gloria B. Lubkin

2/3/97

Steve, Jeff,

Paul & Beverly,

Albert Wheelon asks
that if we receive
letters to the editor about
his article that we send
him copies.

He's very pleased with
the way his article
turned out:

PHYSICS TODAY

from Gloria B. Lubkin

12/22

JS,

Nice work!

Gloria

S 000057

From lagally@neep.engr.wisc.edu Sat Jan 8 22:24:30 1994
From: lagally@neep.engr.wisc.edu
Subject: APS meeting
To: jds@aip.org
Date: Sat, 8 Jan 94 21:24:26 CST
Cc: lagally@neep.engr.wisc.edu (Max G. Lagally)

Jeff: I don't know whom to ask, so I ask you because you told me last year. I have an invited lecture to give at APS in March (Adler Lecture) and because I have a tight schedule and am trying to get make arrangements, I would like to know what day my talk is. Can you find out for me please? Thanks.

I have had numerous compliments on the article, even comments from classmates I haven't seen for many years.

Max

--

Max G. Lagally
E. W. Mueller Professor
University of Wisconsin--Madison
(608) 263-2078
lagally@engr.wisc.edu

S 000058

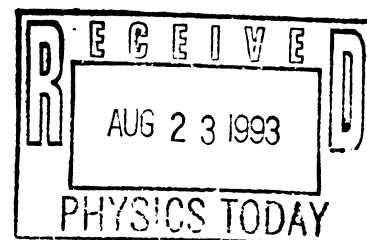


Department of History

West Virginia University

College of Arts and Sciences

20 August 1993



Dr. Gloria B. Lubkin
Editor
Physics Today
335 East 45th Street
New York, NY 10017

Dear Dr. Lubkin:

Thanks for yours of 4 August inviting Rick Slavings and myself to contribute a paper on "The Industrialization of American Astronomy, 1890-1940." We accept with great pleasure.

There is, however, one problem. My wife has been offered a deanship at University of Nebraska-Lincoln and the powers that be are working on a professorship for me. This process is still in an early stage, but may consume a fair amount of my attention and energy this fall. If the matter has a happy ending (and Nebraska would be a good venue for both of us), the new jobs will begin 1 January 1994. This entails moving. Of course, with the prospect of moving to College Park facing you and the PT staff, I need hardly say that even in the best of organizations, there will be some disruption and slippage. Thus I am not able to give you an exact date for delivery of a manuscript. I will do so just as soon as things become clear on this end. Late winter 1994 will be my goal. Earlier if possible.

S 000059

Lankford to Lubkin, 20 August 1993

I have been reading on the topic of Big Science and want to recast the paper as follows. The new title would be something like: **THE MAKING OF BIG SCIENCE: THE INDUSTRIALIZATION OF AMERICAN ASTRONOMY, 1880-1940**. And we would begin with a paragraph placing the problem in the context of the history of big science. This will be done with appropriate references to physics as the exemplar of Big Science. The literature suggests that a major problem is understanding the pre-1940 roots of Big Science in America and this paper will be aimed at that problem. If all goes well, I will use this problem as the topic for my seminar at Nebraska when I go to interview. A little pre-testing feed back is always useful.

I hope that Jeff Schmidt will be assigned to work with me once you have the manuscript. He is first-rate and we worked very well together on the 1990 paper.

Sincerely,

A handwritten signature in black ink, appearing to read 'John Lankford', written in a cursive style.

John Lankford
Professor of the History of Science

S 000060



Department of Nuclear Engineering and Engineering Physics
University of Wisconsin

153 Engineering Research Building
1500 Johnson Drive
Madison, WI 53706-1687
Phone (608) 263-1646

January 3, 1992

Professor James D. Callen
521 Engineering Research Building
1500 Johnson Drive
Madison, WI 53706-1687
Phone (608) 262-1370
FAX (608) 262-6707
CALLEN@UWM

Gloria B. Lubkin, Editor
Physics Today
335 East 45th Street, 37th floor
New York, NY 10017

Dear Gloria:

As you are undoubtedly aware by now, we have finally completed the two articles on "Progress Toward a Tokamak Fusion Reactor" and "Stability and Transport Processes in Tokamak Plasmas," which will be published in your January issue. I apologize for its taking so long for us to complete them – it took me being on sabbatical this year to have enough time to finally get them completed, even with Rob Goldston ultimately assuming the lead role on the first article. I appreciate your forbearance with our delayed schedule. We are especially pleased that both articles are being published in a single issue with a picture of TFTR on the cover since we now realize how unlikely that situation is under normal circumstances. Finally, I would like to note how helpful your technical editors, Jeff Schmidt and Graham Collins, have been in polishing up these articles and making them much more understandable to the physics community beyond plasma physics. In particular, I learned a lot about simplicity and precision in technical writing from Jeff Schmidt's careful, patient technical editing of my manuscript and my numerous clarifying discussions with him. This experience should be quite helpful to me in my present project – writing a graduate level textbook on plasma physics.

With regard to the free copies of the January issue and offprints which, according to your letter of 22 November, you will be providing for each article, could you please send all of them (total of 6 magazine copies plus 100 + 100 offprints) to me at my University of Wisconsin address. I will take care of distributing them equitably to the six coauthors of the two articles in this cooperative venture. For your reference, we are also ordering through the AIP 600 copies of a special offprint package comprised of the cover and the two articles.

As this saga draws to a close, I wish you the best of luck in dealing with authors and acquiring manuscripts from them in a timely manner – to get them into a magazine that has to be balanced and timely, but in any case must go out monthly. It must be a nerve-wracking job. Best wishes for continued success at it.

Sincerely,

James D. Callen
Kerst Professor of Nuclear Engineering
& Engineering Physics and Physics

JDC:blg
cc: J. Schmidt

S 000061

CALIFORNIA INSTITUTE OF TECHNOLOGY

Arthur Amos Noyes Laboratory of Chemical Physics, Mail Code 127-72
Pasadena, California 91125

AHMED H. ZEWAIL

LINUS PAULING PROFESSOR
OF CHEMICAL PHYSICS

Telephone: (818) 356-6536
Telex: 675425 CALTECH PSD
FAX: 818-792-8456

MAY 1990
RECEIVED
PHYSICS TODAY

May 9, 1990

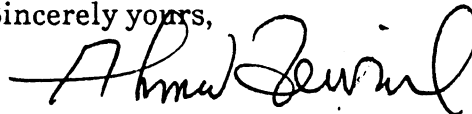
Dr. Gloria Lubkin
Editor
Physics Today
140 E. 45th Street (37th Floor)
New York, New York 10017

Dear Dr. Lubkin:

This letter is regarding the Physics Today special issue on Dynamics of Molecular Systems. As you know, I was one of the authors of the special issue, and I interacted with Jeff Schmidt in the process of producing our article. I wanted you to know that Jeff has made very important suggestions, and I really do appreciate his genuine interest in producing high quality articles. He is excellent and Physics Today is lucky to have him.

I was delighted to write the article, and I hope that this special issue will be of interest to your readers.

Sincerely yours,



Ahmed H. Zewail

AHZ:lm

S 000062

CALIFORNIA INSTITUTE OF TECHNOLOGY

Arthur Amos Noyes Laboratory of Chemical Physics, Mail Code 127-72
Pasadena, California 91125

AHMED H. ZEWAIL

LINUS PAULING PROFESSOR
OF CHEMICAL PHYSICS

Telephone: (818) 356-6536
Telex: 675425 CALTECH PSD
FAX: 818-792-8456

May 9, 1990

Mr. Jeff Schmidt
Physics Today
140 E. 45th Street (37th Floor)
New York, New York 10017

Dear Jeff:

Thank you very much for sending me the final publication of the special issue. I really wanted you to know in writing that you did a great job! You might be interested in keeping in your records the letter I sent to the editor.

With my very best wishes,



Ahmed H. Zewail

AHZ:lm

Enclosure

P.S. 1 I checked in all the correspondence, and despite your outstanding credentials, they still spelled laser as "lasser" on line five of the article- - I still think you are a great guy.

P.S. 2 Could you please send me the photos and slides. Thank you.

S 000063

Giorgio
Margaritondo
Bitnet:
Giorgio@Wiscpsl

**Synchrotron Radiation Center
University of Wisconsin-Madison**

3731 Schneider Drive
Stoughton, WI 53589-3097 – Phone (608) 873-6651

1988 April 21

Dr. Gloria Lubkin
Editor, Physics Today
335 East 45th Street
New York, NY 10017

RE: My article in Physics Today (April 1988)

Dear Gloria:

Now that my article has been published, I would like to thank you for giving me this opportunity to celebrate the 100th anniversary of Hertz's discovery. As usual, your staff has done an outstanding job in transforming my English-Italian into an impeccable text that Hemingway would not have minded to sign — and my poor pictures into super-sharp figures.

Would you please extend my thanks to the staff that was involved in the production of the article.

With my best regards.

Sincerely,



Giorgio Margaritondo
Associate Director for Research

GM:tlm

S 000064



Helsinki University of Technology
Low Temperature Laboratory
Dr. Olli V. Lounasmaa, Director,
Research Professor of the Academy
of Finland

Helsinki, Oct. 12, 1989

Ms. Gloria Lubkin
Physics Today

Dear Gloria:

I was very pleased with the typographical
appearance of my article in the October
issue of Physics Today. Please convey
my appreciation to Jeff Schornick as well.

Best wishes,

Sincerely yours,

Olli Lounasmaa

S 000065

OCT 1989
RECEIVED
PHYSICS TODAY

SEP 21 '89 08:53 AMINSTRPHYS NYK

P.1/1

21 SEPT, 89

RCA SEP 21 08:30
AMINSTRPHYS NYK

411059 CERII SU

GLORIA B LUEKIN
EDITOR
PHYSICS TODAY
335 EAST 45TH STREET
NEW YORK N Y 10017
U S A

DEAR GLORIA,

THANK YOU FOR PROVIDING FREE OFFPRINTS. I HAVE ALREADY RECEIVED ABOUT TWENTY RESPONSES ON ENERGY AND MASS. MOST OF THEM ARE FAVORABLE, ONE CRITICAL AND SEVERAL CRAZY. HOW MANY LETTERS HAVE YOU RECEIVED IN CONNECTION WITH MY ARTICLE?

THE OFFPRINT LOOKS QUITE IMPRESSIVE, AND I'M GRATEFUL TO JOFFREY SCHMIDT FOR THIS. I HAVE ALSO RECEIVED A LETTER FROM PETER G. BROWN SAYING 'WE ARE PLEASED TO ENCLOSE A COMPLIMENTARY COPY OF OUR JUNE ISSUE'. BUT THE COPY ITSELF DID NOT ARRIVE.

I HAVE THE MOST WARM RECOLLECTIONS FROM MY VISIT TO YOUR OFFICE.

WITH CORDIAL WISHES,
LEV OKUN

AMINSTRPHYS NYK

411059 CERII SU

S 000066

to Jan 15

December 14 '89

Dear Gloria

I have just received a copy of the December issue of Physics Today. I want you to know how very pleased I am with the way my piece has come out. Please tell that also to all those others who worked on it.

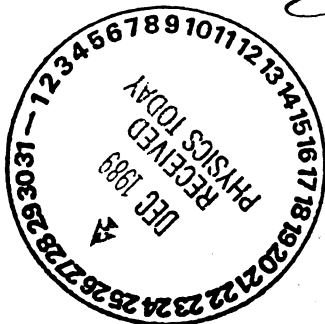
I am just back from hectic but very pleasant days in Stockholm where Ida and I attended the Nobel circus.

Sam's greetings

Yours

Bohr

S 000067



PHYSICS TODAY

from Jeff Schmidt

18 July 94

Gloria —

I don't know if you saw
this. It's a note from
Abraham Pais complimenting
us on our editing of his
article.

Jeff

Blegdamsvej 17, DK-2100 København Ø

PHONE: (+45) 3532 5200

PHONE, direct (+45) 353 25

TELEFAX, national: (31) 42 10 16

TELEFAX, internat: +45 31 42 10 16

LEFAX

eff Schmidt

2.
301-2090842
6/21/94

+ . Attached please
to my piece for Ph. Today.

I compliment you on your editing —
and on your excellent choice of pictures!
Perhaps it is too early to ask:

① How many free offprints

② How many can I order? Price?

I'd like them all with cover.

Please contact if there are further
questions.

Best regards as to
Gloria
Bran Pais

S 000068

KØBENHAVNS UNIVERSITET

NIELS BOHR INSTITUTET

Blegdamsvej 17, DK-2100 København Ø

PHONE: (+45) 3532 5200

PHONE, direct (+45) 353 25

TELEFAX, national: (31) 42 10 16

TELEFAX, internat: +45 31 42 10 16

TELEFAX

to: Mr. Jeff Schmidt
page 1 of: 2.
Telefax no.: 001-301-2090842
date: 6/21/94

Ref.: _____

Dear Mr. Schmidt. Attached please find corrections to my piece for Ph. Today. I compliment you on your editing — and on your excellent choice of pictures! Perhaps it is too early to ask:

① How many free offprints

② How many can I order? Price?

I'd like them all with cover.

S 000069

Please contact if there are further questions.

Best regards as to
Gloria
Bram Pais

*To Jeff Schmidt
With appreciation for considerable editorial
help.
Jerome Karle*

MACROMOLECULAR STRUCTURE FROM ANOMALOUS DISPERSION

Jerome Karle

S 000070

Reprinted from PHYSICS TODAY, June 1989 © American Institute of Physics



MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DEPARTMENT OF PHYSICS

77 MASSACHUSETTS AVENUE
CAMBRIDGE, MASSACHUSETTS 02139

Robert J. Birgeneau

Head of the Department of Physics
Cecil and Ida Green Professor
Of Physics

Room 6-113
(617) 253-4801
Telefax
(617) 253-8554

July 19, 1989

Dr. Gloria B. Lubkin
Editor, Physics Today
335 East 45 St.
New York, NY 10017

Dear Gloria,

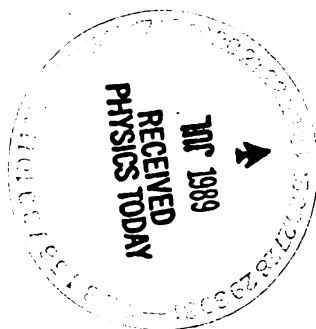
As you realize, our Liquid Crystal article finally appeared in Physics Today and it looks beautiful! I feel obligated to confess to you that you were quite correct in insisting that we simplify the original manuscript. Joel Brock and I have already gotten many compliments on the article - compliments we undoubtedly would not have received for the original version which was too technical. You should also congratulate Jeff Schmidt on a fine editing job. He was a pleasure to work with and he made a number of excellent stylistic improvements.

Best regards!

Yours sincerely,

Robert J. Birgeneau

RJB/km



S 000071

UNIVERSITY OF CALIFORNIA, SAN DIEGO

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO



SANTA BARBARA • SANTA CRUZ

DEPARTMENT OF PHYSICS, B-019
LA JOLLA, CALIFORNIA 92093

April 14, 1986

Ms. Gloria B. Lubkin, Editor
Physics Today
335 East 45 Street
New York, N. Y. 10017

RECEIVED
APR 21 1986
PHYSICS TODAY

Dear Gloria,

It is unfortunate that our paths didn't cross during the March APS meeting in Las Vegas. Hopefully, I will have another opportunity to see you some time in the near future.

I am writing to thank you for inviting me to contribute the article "Novel Types of Superconductivity in f-Electron Systems" for Physics Today. I am very pleased with the way the article turned out, and I enjoyed working with you and Jeff Schmidt on it. I had the opportunity to meet Jeff in Las Vegas, to tell him how much I liked the article, and to thank him for his considerable effort he put into its preparation.

With best regards,

Sincerely,

A handwritten signature in cursive script that reads 'Brian'.

M. Brian Maple

MBM:njm

S 000072

RÉPUBLIQUE FRANÇAISE

COMMISSARIAT A L'ÉNERGIE ATOMIQUE

SERVICE DE PHYSIQUE
DU SOLIDE ET DE RÉSONANCE MAGNÉTIQUE

ORME DES MERISIERS - 91191 GIF-SUR-YVETTE CEDEX FRANCE

TÉLEX : ÉNERGAT SACLAY 690641 F

4 April 1986

Dear Jeff,

I was delighted to see that you were able to have "eye" moved in Fig. 5 of my article — I really appreciate your taking care of this.

I thought the special issue came out rather nicely. Thanks again for your help with my article.

Yours sincerely,

John Clarke

S 000073



The University of Wisconsin - Milwaukee

LABORATORY FOR SURFACE STUDIES

DIRECTOR: David S. Y. Tong

MILWAUKEE, WISCONSIN 53201
PHONE: (414) 963-5765, 4474

October 29, 1984

Dr. Harold L. Davis, Editor
Physics Today
335 East 45th Street
New York, NY 10017

Dear Harold:

Just a note to let you know that since the publication of my article, "Exploring Surface Structure" in Physics Today, I have received many responses. Most of the responses are from people that I have never met. This indicates how popular your journal is. One response characterized Physics Today as a "widely read and influential" journal.

I would like to take this opportunity to thank you for asking me to write the article. Also, I would like to thank Jeffrey Schmidt for his excellent editing work.

On the other hand, some comments from colleagues complain that their names or work were left out of the article. Incidentally, most of the complaints came from West Germany (I do not know the significance of this). I remember the difficult hours Jeffrey and I spent on cutting out names and paragraphs from the original draft. However, it is difficult to convince a colleague that a non-expert cannot care less for a name. They point out that department chairmen and industrial managers read these articles to judge the performance of their staff.

Surface structure is an active and dynamic area. Of the 26 surface techniques that I discussed in the article, I feel many of them deserve full length articles in your journal. I would support such future articles to be written by various authors.

Finally, I have ordered reprints and complimentary copies but have not yet received them. Could someone check on this for me please?

With best regards,

Yours sincerely,

S. Y. Tong
S. Y. Tong

RECEIVED

NOV 7 1984

PHYSICS TODAY

SYT:da

S 000074

RÉPUBLIQUE FRANÇAISE

Jeff

COMMISSARIAT A L'ÉNERGIE ATOMIQUE

SERVICE DE PHYSIQUE
DU SOLIDE ET DE RÉSONANCE MAGNÉTIQUE

ORME DES MERISIERS - 91191 GIF-SUR-YVETTE CEDEX FRANCE

TÉLEX : ÉNERGAT SACLAY 690641 F

5 March 1986

Dear Gloria,

I was very pleased that my article was accepted for Physics Today without any major revisions. I enjoyed interacting with Jeff Schmidt, and felt that he significantly improved the quality of the manuscript. I look forward to seeing the March issue.

With best wishes,

Yours sincerely,

John Clarke

RECEIVED

MAR 12 1986

PHYSICS TODAY

S 000075



UNIVERSITY OF OREGON

May 14, 1984

Jeff Schmidt
Associate Editor
Physics Today
335 East 45 Street
New York, NY 10017

Dear Jeff:

With reference to your letter of May 9 and my telephone reply, I want to put in writing how very grateful I am for the superb editing job that you did on our article on atomic physics with synchrotron radiation. I wish I could write like that!

Will it be possible to order a few reprints, or extra copies of the June issue?

With best regards,

Sincerely,

A handwritten signature in dark ink, appearing to read "Bernd".

Bernd Crasemann
Professor of Physics

BC:sh

S 000076

The American Physical Society

333 EAST 45TH STREET
NEW YORK, N. Y. 10017

Date 20 August 1984

To Harold Davis

Msg: QGIE-1878-7730

From Mildred Dresselhaus

- | | |
|--|---|
| <input type="checkbox"/> for your recommendation | <input type="checkbox"/> to note and return |
| <input checked="" type="checkbox"/> for appropriate action | <input type="checkbox"/> at your request |
| <input type="checkbox"/> for your information | <input type="checkbox"/> for your file |

By EAS
WCH
To
LRB
ER
PT.

S 000077

Posted: Sun Aug 19, 1984 4:33 PM EDT
From: MDRESSELHAUS
To: WHavens
CC: MDresselhaus
Subj: Message to Physics Today

Msg: QGIE-1878-7730

orig EAS
W.H.H.
To
LRB
ER
P.T.

1. I reviewed the article by
Beasley and Geballe and am
sending my copy to you by
Federal Express. The article
is in good shape basically.
2. I found the article by
Fritzsche in my pile eventually.
I have also reviewed that article.
I am pleased with the improvements
that have been made and feel that
it will be an effective article
in Physics Today.
3 . Please be in touch with me on the
remaining items in the issue.
I will be back at MIT on Tuesday
8/21.
Cheers
Millie.

Action?

Command? r2

S 000078

University of Illinois
at Urbana-Champaign

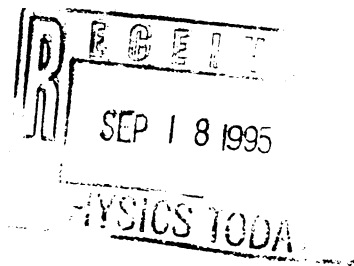
Department of Physics

Loomis Laboratory of Physics
1110 W. Green Street
Urbana, Illinois 61801

James P. Wolfe

Telephone: (217) 333-2374
Telefax: (217) 244-2278
E-Mail: j-wolfe@uiuc.edu

7/16 + 4.1



September 8, 1995

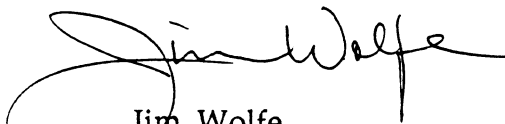
Stephen Benka, Editor
Physics Today
One Physics Ellipse
College Park MD 20740-3843

Dear Steve,

Many thanks to you and your staff for the excellent job you did with my article in the September 1995 issue of Physics Today. The graphics reproduced beautifully, and, of course, the cover is stunning. My interactions with Jeff Schmidt were very pleasant and constructive. The article benefitted greatly from your reviewers' suggestions; it is much better than the one I originally sent you.

The alliteration on the cover, "Seeing Sound in Solids," adds a nice touch. Thanks for inventing it. I will look forward to working with you again in the future.

Sincerely,


Jim Wolfe
Professor of Physics

S 000079

University of Illinois at Urbana-Champaign

College of Engineering
MATERIALS RESEARCH LABORATORY
104 S. Goodwin Ave.
Urbana, Illinois 61801
(217) 333 1370

May 14, 1982

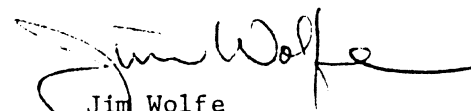
Dr. Tom von Foerster
PHYSICS TODAY
335 East 45th Street
New York, New York 10017

Dear Tom:

After sampling my approximate need, I would like to order 500 reprints of my PHYSICS TODAY article entitled, "Thermodynamics of Excitons in Semiconductors." This would include black-and-white article with four-color cover. Since the article is 8-1/3 pages, I estimate from your guideline sheet that the charge would be $\$110 + 4 \times \$17 = \$178$ plus cover at $\$230 + 2 \times \$26 = \$282$ for about \$460 total cost, plus some cost for 200 covers you now have. If this estimate is far off, let me know; otherwise, please initiate the order.

I am very pleased with the final product. The cover photo reproduced very well and the article and figures came out nicely. I was pleased with the interest and knowledgeability of Jeff Schmidt, whose thorough reading of the manuscript and interest in the material helped to make the article more readable. Thanks.

Sincerely,


Jim Wolfe
Professor of Physics

JW:dj

RECEIVED

MAY 21 1982

PHYSICS TODAY

S 000080



W.W. HANSEN LABORATORIES OF PHYSICS
STANFORD UNIVERSITY
STANFORD, CALIFORNIA 94305-2184

Edward L. Ginzton Laboratory
High Energy Physics Laboratory

Telephone (415) 497- 0213

September 23, 1985

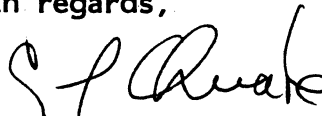
Mr. Jeff Schmidt
Associate Editor
Physics Today
335 East 45 Street
New York, N.Y. 10017

Dear Mr. Schmidt:

The August issue of Physics Today has arrived and in this note I want to tell you that I am pleased with the outcome.

I thank you for the good work that you did on our behalf.

With regards,


C. F. Quate

S 000081

CFQ:am



KUNGL. TEKNISKA HÖGSKOLAN
THE ROYAL INSTITUTE OF TECHNOLOGY

Stockholm, September 29, 1986

Department of Plasma Physics

Dr Gloria Lubkin
Physics Today
335 East 45 Street
New York, N.Y. 10017 USA

Dear Dr Lubkin,

I wish to thank you for the very nice presentation which Physics Today has given my paper "Plasma Universe". I believe that your publication will mean a breakthrough for the general understanding of plasma phenomena in astrophysics and the acceptance of ideas for which I have fought for more than 40 years.

Please convey my appreciation to Dr. Jeffrey D. Schmidt, with whom I have had a number of fruitful telephone conversations.

Yours sincerely,

Hannes Alfvén

Hannes Alfvén

RECEIVED

OCT 0 1986

PHYSICS TODAY

S 000082

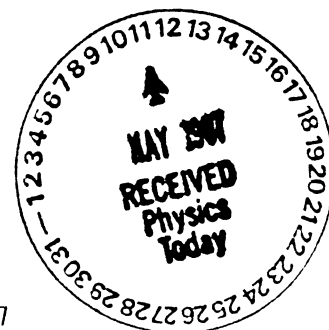
Please note Professor Alfvén's addresses:
To October 3, 1986
Department of Plasma Physics
The Royal Institute of Technology
S-100 44 Stockholm, Sweden

From October 5, 1986 to March 25, 1987
EE & CS Code-014
University of California, San Diego
La Jolla CA 92093 USA

S 000083



UNIVERSITY OF OREGON



Russell J. Donnelly
Professor of Physics
(503) 686-4226

May 5, 1987

Dr. Gloria Lubkin, Editor
Physics Today
140 East 45th Street
37th Floor
New York, NY 10017

Dear Gloria:

Now that my parts of the February and April Physics Today are published I want to thank you very much for making it all possible.

First of all, I thank you on behalf of the low temperature community for the nice series of articles on ^3He and ^4He . It was nice to think of being part of the good old low temperature community. Who the heck would have thought that by April superconductivity would be headed for temperatures created by ice and salt? I wonder what our friends will call themselves now?

I was also pleased by all the telephone calls on the Dana article. Not the least surprise was to find that Leo Dana is the person who got Dave Lazarus interested in science.

I would especially like to thank Jeff Schmidt, who worked closely and thoughtfully with me to make it all become real.

Yours sincerely,

Russell

Russell J. Donnelly

RJD:mcr
0401C

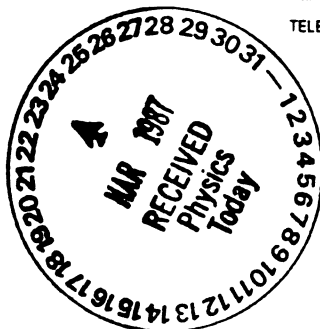
S 000084

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

DATE: March 20, 1987
IN REPLY REFER TO: MP-DO
MAIL STOP: H830
TELEPHONE: (505) 667-2971

Ms. Gloria B. Lubkin/Editor
Physics Today
335 East 45 Street
New York, NY 10017



Dear Gloria:

We are returning the copyright form for the Physics Today article. David Measday would be pleased to sign if that is required.

May I say Jeff Smith's efforts produced what the authors consider to be a much more readable article, for which we are most appreciative.

Sincerely,

Darragh Nagle
Senior Fellow

DN:rs

enc.: a/s

cy: CRM-4(2), MS A150
File

S 000085

JS

UNIVERSITY OF TOKYO

7-3-1 HONGO, BUNKYO-KU, TOKYO 113, JAPAN

FACULTY OF SCIENCE
DEPARTMENT OF PHYSICS

TELEPHONE: 03-812-2111
CABLE: TOKUNIV RIGAKU
TELEX: UTPHYSIC J23472

RECEIVED
NOV 1987
Physics
Today

13 November 1987

Dr. Gloria B. Lubkin
Editor, Physics Today
American Institute of Physics
335 East 45th Street
New York, NY 10017
U.S.A.

Dear Dr. Lubkin,

Thank you very much for your letter of November 6.

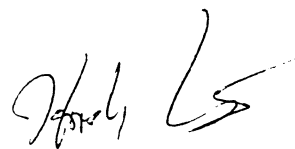
It was a great pleasure to meet you and to talk with you
in Washington.

I received the edited version of my manuscript. I was very
happy to see the beautifully edited version of my article.

I am now herewith sending you back a copy of right form which
you requested to fill out.

Many thanks again for inviting me to write an article in
Physics Today. I hope to see you again in the near future.

Yours sincerely,



Hiroshi Kamimura

S 000086

FILE: NAGLE 377 QUEUE: TYP-OUT
IS: PT- FMT:
BY: J :25/02,12:10 REV: ELLS ;12/03,08:41
12-MAR-87 09:24:14

11 March 1987, 3:30 pm.

This article has three tables.

Dr. Darragh Nagle and Dr. Mikkel

Johnson

Los Alamos National Laboratory

Mail stop H864

Los Alamos, New Mexico 87545

505-667-2971 (Nagle)

505-667-6942 (Johnson)

Dr. David Measday

Physics Department

University of British Columbia

6224 Agriculture Road

Vancouver, BC

Canada V6T 2A6

604-228-5098 (Measday)

604-228-3853 (physics department)

*Jeff -
you did a
nice job on
this article.
Glen
3/13*

S 000087

MOORHEAD STATE UNIVERSITY

A Century of Excellence / 1887-1987

March 10, 1988

Ms. Gloria B. Lubkin, Editor
Physics Today
335 East 45th Street
New York, New York 10017

Dear Ms. Lubkin:

I acknowledge with thanks the receipt of your letter of March 7, 1988, informing me about the acceptance of my manuscript for publication in Physics Today (April issue). I am herewith enclosing the copyright form duly signed.

I take this opportunity to thank you and your associates, especially Jeff Schmidt, for bringing this project to a successful ending. It has been a very rewarding experience for me and I have very much enjoyed working with Jeff Schmidt.

Sincerely,



Vijendra K. Agarwal
Associate Professor
Department of Physics and Astronomy

VJK/lt
enclosure

S 000088

Moorhead, Minnesota 56560

Moorhead State University is an equal opportunity employer/educator.

QUEENS COLLEGE

o/ THE CITY UNIVERSITY OF NEW YORK

FLUSHING • NEW YORK 11367-0904

DEPARTMENT OF PHYSICS

TELEPHONE: 718-520-5000

March 31, 1987

Dr. Jeffrey Schmidt
PHYSICS TODAY
335 E. 45th Street
New York, NY 10017

Dear Jeff:

I want to thank you for your extraordinary efforts in ferreting out eye-grabbing photos of vehicle accidents. In fact, they captured my attention to the extent that I read the article yet again.

I think every aspect, the photos, layout, color, length, etc., have made a balanced and easily readable article. You have done a fine job of editing and I and my colleagues appreciate it.

Sincerely,



Arthur C. Damask
Professor

ACD:sa

S 000089



AMERICAN INSTITUTE OF PHYSICS

335 EAST 45 STREET NEW YORK, NEW YORK 10017 • Telephone (212) 661-9404

Telex 960983 AMINSTPHYS-NYK

KENNETH W. FORD
Executive Director and CEO

28 October 1987

To: Gloria Lubkin
From: Kenneth W. Ford *KW*
Subject: Canavan - Bloembergen-Patel debate

Congratulations to you and your staff on a superb job of presenting the Canavan vs. Bloembergen and Patel material. It is very effective and much more readable than standard "debate" formats. The PT lead-ins help too. I am very impressed by the job you have done.

KWF:lab

cc: John Rigden

▲
OCT 1987
RECEIVED
Physics
Today

S 000090

AMINSTPHYS NYK

⊕

AMINSTPHYS NYK

DR JEFRE SCHMIDT
ASSOCIATE EDITOR, PHYSICS TODAY
AMERICAN INSTITUTE OF PHYSICS
335 EAST 45TH STREET
NEW YORK, NY 10017
USA

DEAR DR SCHMIDT,

RECEIVING PHYSICS TODAY DECEMBER SPECIAL ISSUE 'PHYSICS IN JAPAN', I WAS VERY PLEASED AND HAPPY TO SEE THAT MY ARTICLE WAS PUBLISHED SATISFACTORILY. THIS IS ENTIRELY DUE TO YOUR GREAT HELP. I WOULD LIKE TO THANK YOU FOR YOUR KIND COOPERATION.

IS IT POSSIBLE TO OBTAIN REPRINTS OF MY ARTICLE? SINCE THERE ARE A NUMBER OF REQUEST FOR REPRINT FROM ALL OVER THE WORLD, I WOULD LIKE TO HAVE 100 OR 200 REPRINTS, DEPENDING ON ITS COSTS. WOULD YOU KINDLY LET ME KNOW IT BY TELEX (UTPHYSIC J-23472) OR BY FAX (3-814-9717). BEST REGARDS,
HIROSHI KAMIMURA

⊕

AMINSTPHYS NYK

TO REPLY FROM TELEX I OR II (TWX) DIAL 100. FROM EASYLINK USE /WUW.
EST 0206 APR/06/1988

S 000091



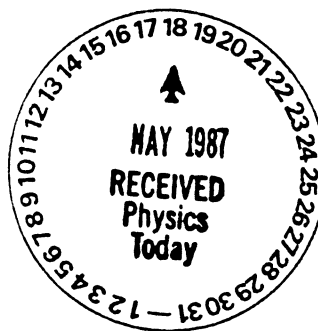
Lawrence Berkeley Laboratory

1 Cyclotron Road Berkeley, California 94720

(415) 486-4000 • FTS 451-4000

JS from OL

May 8, 1987



Dr. Daniel E. Koshland, Jr., Editor
SCIENCE
1333 H Street, N.W.
Washington, D.C. 20005

Dear Dan:

Many thanks for your letter, of 29 April, telling of your decision to publish my article, if I revised it to conform to your standards of length, etc. Your letter arrived on my desk in the same mail as one from Physics Today, enclosing a revised manuscript for my talk, as edited by Jeff Schmidt. This may sound as though I was dealing, improperly, with two journals, at the same time, but the following history should clear me of such charges. Last Fall, Gloria Lubkin, editor of Physics Today, called to ask me if I would write an article for her magazine. I said I had just been invited to give a lecture at the Royal Swedish Academy, during the 1986 Nobel Festival. She said she'd like to have an opportunity to publish the text of that talk.

When I had finished the manuscript, in late January of this year, I sent a copy to Gloria, who called to say that it was twice as long as she could publish. I suggested that she print it serially, in two issues but she said that wasn't a viable option. I certainly didn't suggest that I edit it down to half its length -- it had taken me two months to get it down to what I considered to be my bare minimum, of about 10,000 words.

I thought I had been firmly rejected, and have no memory of what Gloria is sure she told me -- that if her editors could cut it in half, then she'd like to publish it. So at the suggestion of Bill Glen, who is writing the history of the impact hypothesis, and who had recently been installed as historical editor by EOS, I submitted it to EOS. Bill Glen did his best to persuade his editor to accept my Stockholm manuscript, but with no success.

You know most of the story since then; I believe that I had already sent you a copy -- not as a potential publisher but as a friend, and we talked about the difficulties I was having in getting it published, in spite of my pride of authorship. I don't remember all the details of our conversation, but I believe that when I asked if you'd consider publishing it, you suggested that I formally submit it to Science. I was really surprised when your reviewer said it shouldn't be published, and I then (as you know) spoke of my problem and my frustration, to my two friends with connections to the editing of your magazine, Phil Abelson and Dave Raup. They sounded friendly, but they apparently came on too strongly for your taste. But your letter of 29 April indicates that they may have had the effect I had hoped for, because you say, "Science is planning to publish a revised copy," if I would revise it to conform to Science standards.

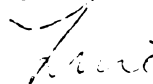
S 000092

But as I said in my opening paragraph, the edited-down copy of my talk arrived from Physics Today in the same mail as did your recent letter. I was of course very surprised to see that Physics Today had spent so much editorial effort on my manuscript, after what I had thought was a firm rejection, and a friendly "breaking-off of negotiations" between me and Gloria. I've discussed the matter at length with Gloria, and said at first that Science was certainly the better vehicle for publication, since it reached a wider scientific audience. She countered by saying that these days, all members of the AGU get copies of Physics Today, and the impact-related cover picture would catch the eyes of the earth scientists.

But probably, the most telling point was that if I went with Science, I would have let Gloria waste three weeks of Jeff Schmidt's time, and I'd have to waste a similar amount of my time, to do my own editing. And I had to take seriously Gloria's confidence that we had made a deal to let her publish my edited-down version, even though my normally excellent memory had no record of it. (In the world of business, a mix-up like this would keep a few lawyers busy for a month or two. So isn't it nice that we don't let lawyers play in our sandbox?)

I really appreciate your willingness to give me a second chance, Dan, but in view of all the points I've set down in this letter, I think I should go with Physics Today.

Very sincerely,



Luis W. Alvarez

LWA/jrb
enclosure
c: Gloria B. Lubkin

P.S. I look forward to seeing the report by Bruce Bohor et al. of the USGS, in Denver, that you published today. Tom Brokaw had the story on his NBC Nightly News, last night, and the Chronicle had more details, this morning. With Walter's permission, I'm enclosing a copy of a reply to NATURE, evaluating the latest efforts by Officer and Drake, to shed doubt on our work. Walt thinks it will be signed by the roughly eight members of his group that has had a communication accepted by NATURE, backing the idea of "step-wise mass extinction," caused by comet showers. As I said in my Stockholm talk, this group comprises one astronomer, two geologists and five or six paleontologists. You will recognize that I couldn't have written such an article, but after spending several years in the company of paleontologists, I am confident that what Walt and his friends say is really true. I'm convinced that Officer and Drake and their few supporters will be simply an embarrassing footnote to the history of the K-T extinction-by-impact hypothesis, when that history is completed by Bill Glen, who has hundreds of hours of audio-taped interviews with "all the players."

*For Walter's reply before
I send it to you*

L.W.A.
L.W.A.

S 000093

From: Jeff Schmidt
To: mwiley
Date: Sat, Feb 19, 2000 1:20 AM
Subject: Semiannual purge of Univ. of Md WAM Accounts -Reply

Hi Margaret --

Yes, I'd like to dodge the purge.

Jeff Schmidt
jeff@wam.umd.edu
[REDACTED]

CC: jschmidt

S 000094

From: Cary Hoagland <hoagland@macroint.com>
To: ACP.AIP(JSCHMIDT)
Date: Wed, Feb 9, 2000 12:40 PM
Subject: Good News for You

Could not get through on the (202) number (busy signals). Pls. retrieve the (301) VM. Phone me re whether okay. (301) 572-0331.

S 000095

Received: from pinet.aip.org
([192.58.150.10])
by aip.org; Wed, 09 Feb 2000 12:39:07 -0500
Received: from macroint.com (macroint.com [199.34.38.229])
by pinet.aip.org (8.9.1a/8.9.1) with ESMTP id MAA11173
for <jschmidt@aip.org>; Wed, 9 Feb 2000 12:39:28 -0500 (EST)
Received: by gateway.macroint.com id <119044>; Wed, 9 Feb 2000 12:40:43 -0500
Mime-Version: 1.0
Message-Id: <00Feb9.124043est.119044@gateway.macroint.com>
Return-receipt-to: hoagland@macroint.com (Cary Hoagland)
From: hoagland@macroint.com (Cary Hoagland)
Subject: Good News for You
To: jschmidt@aip.org
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7bit
Content-Description: cc:Mail note part
Date: Wed, 9 Feb 2000 12:40:42 -0500

S 000096

From: "HoaglandCary@juno.com" <hoaglandcary@juno.com>
To: Jeff Schmidt <jschmidt@aip.org>
Date: Fri, Apr 28, 2000 8:02 PM
Subject: Editing

I was there recently editing the book list. Got any articles for me? Or have you got all the copyediting help you need? I may not be Paul, but I might be able to help . . . It is thanks to you that I am now successfully using Junoweb mail, so I had to write to you. My home ph. is still (301) TRY-SALAD.

(Ms.) Cary C. Hoagland
Bilingual Editor
(W) (301) 572-0331

S 000097

Received: from pinet.aip.org
([192.58.150.10])
by aip.org; Fri, 28 Apr 2000 20:01:47 -0400
Received: from rmx06.iname.net (rmx06.iname.net [165.251.8.205])
by pinet.aip.org (8.9.1a/8.9.1) with ESMTP id UAA21611
for <jschmidt@aip.org>; Fri, 28 Apr 2000 20:02:08 -0400 (EDT)
Received: from web23.pub01 by rmx06.iname.net (8.9.1/8.8.0) with SMTP id UAA04696 ; Fri, 28 Apr
2000 20:02:08 -0400 (EDT)
Message-ID: <383588667.956966525639.JavaMail.root@web23.pub01>
Date: Fri, 28 Apr 2000 20:02:05 -0400 (EDT)
From: "HoaglandCary@juno.com" <hoaglandcary@juno.com>
To: Jeff Schmidt <jschmidt@aip.org>
Subject: Editing
Mime-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit
X-Mailer: mail.com
X-Originating-IP: 199.34.38.229

S 000098

AGENDA

Articles Meeting

Thursday April 13, 2000
1:30pm - 3:00pm
3rd Floor Conference Room

- [20 mins] SB Review Tentative Schedule of Articles memo (attached)
- [35 mins] Action Items from last Articles Meeting
- SB - to find reviewer for proposal on "numerical methods"
 - GL - to contact Shi-Ching Wang re: progress of molecular physics/polymers
 - JS - to draft solicitation letter for Loren Graham
 - BS - to contact Don Anderson re: article on Earth's core
 - CD - to contact Erv Garrison
 - PP - to pursue strongly coupled plasmas
- [10 mins] Update on Special Issue: Physics and National Security
- [10 mins] NIST 100th Anniversary in March 2001
- [5 mins] Summarize and set/discuss date for next meeting

From: Tonya Gary
To: Editors
Date: Wed, Mar 8, 2000 11:05 AM
Subject: Articles Meeting

Attached is the agenda and Articles at a Glance list.

Also, the next articles meeting is scheduled for Wednesday, March 15 at 10:00.

S 000100

AGENDA

Articles Meeting

Wednesday, March 15, 2000

10:00pm - 11:30pm

3rd Floor Conference Room

- [20 mins] SB Review Tentative Schedule of Articles memo (attached)
- [35 mins] Action Items from last Articles Meeting
- SB - to find reviewer for proposal on "numerical methods"
 - to talk with Sid Drell, Bud Wheelon re: Nat'l defense
 - to read article by Parker
 - to solicit Tsallis
 - BL - to contact Noble Johnson re: possible article on gallium-nitride
 - GL - to contact Alex Zunger re: semiconductor quantum dots
 - to contact Shi-Ching Wang re: progress of molecular physics/polymers
 - JS - to contact Loren Graham re: article on Soviet science
 - BS - to contact Don Anderson re: article on Earth's core
 - to contact Tom Rossing re: musical acoustics
 - CD - to contact Gelbart
 - to contact Erv Garrison
 - RF - to find reviewer for Netz article
 - PP - to pursue plasma physics
- [25 mins] Discussion of Special Issue: Physics and National Security
- [5 mins] Summarize and set/discuss date for next meeting

PHYSICS TODAY

Articles at a Glance
(Ever-Evolving) as of March 7, 2000

May	Johnson - Career Opportunities in Optics (optics/photonics)	SB?
	Brenner - Teach through G. I. Taylor	JS
	Schweber - Feynman's Metaphors	PP
June	Girvin - Quantum Hall Ferromagnets (magnetism)	BS
	Gruenberg - History of Layered Magnetic Structures	??
	Parker - The Sun	JS
	Thomas - Optical Communication	JS
July	Isaacs - Hard X-Ray Microscopy	PP
	Smith - Science with Soft x Rays (xrays)	??
	Johnson - Gallium-Nitrite Laser Diodes	??
August	Lagally - Low-Energy Electron Microscopy (microscopy)	??
	Parkin - Spin Devices	??
September	Rahman - Supercond. Detectors in Astro. (superconductivity)	??
October	(vacuum/thin films)	
November	(matsci)	
December 2000	(computers AND radiation)	

S 000102

PHYSICS TODAY GUIDELINES FOR FREELANCE ARTICLES EDITORS

GENERAL GUIDELINES

- 1 -- To become familiar with the magazine's style, read half a dozen of the best articles. Use them as a guide for your editing.
- 2 -- To meet the deadline, allot time for the various steps in the editing and production process (detailed below).
- 3 -- For more detail about editing, see Arthur Plotnik's book, "Elements of Editing," (Macmillan, 1982). The book notes the importance of knowing who the readers are.
- 4 -- The level of the article should be appropriate for physical scientists with no special knowledge in the subject area of the article. That is, they are scientifically sophisticated but no more of an expert than you (the editor) are.
- 5 -- Remember that unlike subfield journals, Physics Today is not required reading for our subscribers. They will read it only if the content is interesting and the appearance attractive. Thus we strive to draw them into the article, and sustain their interest.
- 6 -- Think about illustrations early in the editing process. A good figure 1 can create an enticing two-page "spread" for the article's opening, helping draw readers in.
- 7 -- A figure and its caption should be a self-contained unit so as to deliver something meaningful to readers who look only at the illustrations.
- 8 -- The article's title, bank (the summary/teaser sentence, usually written by you) and first paragraph should say different things. Together, they should give the reader enough information about the article's content (perhaps even the "bottom line") to decide whether to continue or not. Our readers are busy people; the more help we can provide them the more they will get out of Physics Today.
- 9 -- Make sure the main themes of the article are clearly stated. Often, these themes are buried in unlikely places. The reader, early on, needs to understand their importance.
- 10 -- For guidance on computer coding special parts of the text, such as subheadings and references, see the sample file provided. For unusual problems, contact Rita Wehrenberg (rwehrenb@aip.acp.org, 301-209-3045) at the Physics Today office.
- 11 -- Don't be too timid in the editing. We are more than copy editors, editing more heavily than journals, less heavily than Scientific American. Adjust the article's content and structure if necessary. As much as possible, preserve the author's style but don't compromise on clarity. The quality of the presentation, including writing, is paramount.
- 12 -- Equations that are kept in the article can often be simplified by removing unnecessary

subscripts, arguments, and so on.

13 -- True digressions can go into sidebars.

14 -- The photo archive at the Neils Bohr Library (down the hall from the Physics Today offices at the American Center for Physics, in College Park, Maryland) is a good source of photographs of physicists. You can search the photo archive on the internet.

15 -- The editor on sabbatical is available for questions. Call Jeff Schmidt at 202-537-3645 (noon to 10 pm, seven days a week). Or leave a voice mail message for him at 301-209-3048 (24 hours per day); if he is out of town, he'll still typically get back to you within one day.

THE PROCESS

I -- Edit the manuscript, making sure it conforms to the author guideline sheet (length, reference and figure limits, for example) and house style as shown by published articles (bank, subheadings, author note, references and figure captions, for example). Work with author as needed in the process. It is often good to collect questions for the author and then send a detailed email or make a lengthy phone call to address all of them at the same time. We don't want our editing to blindside the author, but we don't want to be pests either. Simple questions can be embedded in the draft as boldface author queries, placed within square brackets or between asterisks.

II -- Give edited article, in galley form, to copy editor (Paul Elliott, pellott@aip.acp.org, 301-209-3041) for copy editing. Include edited figures. Plan on one week turnaround time from the copy editor.

III -- Meet with art editor (Elliot Plotkin, eplotkin@aip.acp.org, 301-209-3049)) and present edited figures for final preparation.

IV -- Enter copy editor's changes into computer system. If you have questions on specific changes, negotiate directly with Paul.

V -- Give result and final figures to Editor (Steve Benka, sbenka@aip.acp.org, 301-209-3037)) for review.

VI -- Enter any further changes into computer system. If you have questions on specific changes, negotiate directly with Steve. Send the corrected galleys and final figures to the author for review. We typically ask for changes to be sent within two days. Include offprint info sheet.

VII -- Enter the author's changes into computer system. If an author's suggested fixup is ugly, try an alternate. (It doesn't always require negotiation.) Give electronic file (WordPerfect 5 is preferred) to art editor to produce "first pages."

VIII -- Scrutinize and finalize the pages and give to final reader (Judy Barker) for proofreading.

Please edit (including adding/deleting items) as you see fit. - Steve,

PHYSICS TODAY GUIDELINES FOR FREELANCE ARTICLES EDITORS

GENERAL GUIDELINES

- 1 -- To become familiar with the magazine's style, read half a dozen of the best articles. Use them as a guide for your editing.
- 2 -- Allot time for the various steps in the editing and production process to meet the deadline.
- 3 -- For more detail about editing, see the book, "Elements of Editing." The book notes the importance of knowing who the readers are.
- 4 -- The level of the article should be appropriate for scientists with no knowledge in the subject area of the article. That is, they are scientifically sophisticated but no more of an expert than you (the editor) are.
- 5 -- Remember that unlike subfield journals, Physics Today is not required reading for our subscribers. They will read it only if it is interesting. Thus we strive to draw them into the article, and sustain their interest.
- 6 -- Think about illustrations early in the editing process. A good figure 1 can create an enticing two-page "spread" for the article's opening, helping draw readers in.
- 7 -- A figure and its caption should be a self-contained unit so as to deliver something meaningful to readers who look only at the illustrations.
- 8 -- The article's title, bank (summary/teaser sentence) and first paragraph should say different things. Together, they should give the reader enough information about the article's content (perhaps even the "bottom line") to decide whether to continue or not. Our readers are busy people; the more help we can provide them the more they will get out of Physics Today.
- 9 -- Make sure the main themes of the article are clearly stated. Often, these themes are buried in unlikely places. The reader, early on, needs to understand their importance.
- 10 -- For guidance on computer coding special parts of the text, such as subheadings and references, see the sample file provided. For unusual problems, contact Rita Wehrenberg at the Physics Today office.
- 11 -- Don't be too timid in the editing. We are more than copy editors, and edit more heavily than journals, less heavily than Scientific American. Adjust the content and structure if necessary. As much as possible, preserve the author's style but don't compromise on clarity. The quality of the presentation, including writing, is paramount.
- 12 -- True digressions can go into sidebars.
- 13 -- The photo archive at the Neils Bohr Library (down the hall from the Physics Today offices

at the American Center for Physics, in College Park, Maryland) is a good source of photographs of physicists. You can search the photo archive on the internet.

14 -- The editor on sabbatical is available for questions. Call Jeff Schmidt at 202-537-3645 (noon to 10 pm, seven days a week). Or leave a voice mail message for him at 301-209-3048 (24 hours per day); if he is out of town, he'll still typically get back to you within one day.

THE PROCESS

I -- Edit the manuscript, making sure it conforms to the author guideline sheet (length, reference and figure limits, for example) and house style as shown by published articles (bank, subheadings, author note, references and figure captions, for example). Work with author as needed in the process. It is often good to collect questions for the author and then send a detailed email or make a lengthy phone call to address all of them at the same time. We don't want the author to be blindsided by our editing, but we don't want to be pests either.

II -- Give edited article, in galley form, to copy editor (Paul Elliott) for copy editing. Include edited figures. Plan on one week turnaround time from the copy editor.

III -- Meet with art editor (Elliot Plotkin) and present edited figures for final preparation.

IV -- Enter copy editor's changes into computer system.

V -- Give result and final figures to editor for review.

VI -- Enter any further changes into computer system and send the corrected galleys and final figures to the author to check. Include offprint info sheet.

VII -- Enter the author's changes into computer system and give electronic file to art editor to produce first pages.

VIII -- Check and finalize the pages and give to final reader (Judy Barker) to check.

From: Jeff Schmidt
To: SBENKA
Date: Fri, Nov 27, 1998 5:12 pm
Subject: Freelancer info

27 November 1998

Steve --

Here is the revised info for freelance article editors.

-- Jeff

-
- To become familiar with the magazine's style, read half a dozen of the best articles. Use them as a guide for your editing.
 - Allot time for the various steps in the editing and production process to meet the deadline.
 - For more detail about editing, see the book, "Elements of Editing." The book notes the importance of knowing who the readers are. The level of the article should be appropriate for advanced undergraduate physics majors or beginning graduate students.
 - Remember that unlike subfield journals, Physics Today is not required reading for our subscribers. They will read it only if it is interesting.
 - Think about illustrations, especially figure 1, early in the editing process.
 - The article's title, bank (summary/teaser sentence) and first paragraph should say different things.
 - Make sure the main themes of the article are clearly stated.
 - For guidance on computer coding special parts of the text, such as subheadings, contact Rita Wehrenberg at the Physics Today office.
 - Don't be too timid in the editing. Do more than copy editing but preserve the author's style. Adjust the content and structure if necessary. We edit more heavily than journals, less heavily than Scientific American.
 - True digressions can go into sidebars.
 - A figure and its caption should be a self-contained unit so as to deliver something meaningful to readers who look only at the illustrations.
 - The photo archive at the Neils Bohr Library (down the hall from the Physics Today offices at the American Center for Physics, in College Park, Maryland) is a good source of photographs of physicists. You can search the photo archive on the internet.
 - The editor on sabbatical is available for questions. Call Jeff Schmidt at 202-537-3645 (noon to 10 pm, seven days a week). Or leave a voice mail message for him at 301-209-3048 (24 hours per day); if he is out of town, he'll still typically get back to you within one day.

Process:

- Edit the manuscript, making sure it conforms to the author guideline sheet (length, reference and figure limits, for example) and house style as shown by published articles (bank, subheadings, author note, references and figure captions, for example). Work with author in the process.
- Give edited article, in galley form, to copy editor for copy editing. Include edited figures.
- Meet with art editor and present edited figures for final preparation.
- Enter copy editor's changes into computer system.

S 000107

- Give result and final figures to editor to check.
- Enter any further changes into computer system and send the corrected galleys and final figures to the author to check. Include offprint info sheet.
- Enter the author's changes into computer system and give electronic file to art editor to produce first pages.
- Check and finalize the pages and give to final reader (Judy Barker) to check.

CC: JSCHMIDT

S 000108

Read 1/2 dozen best articles - use PT as a guide

Process is important - copy flow - time table
deadlines

"Elements of Editing" - define our readers
- "style"

Magazine, not journal; read because it's interesting

Think about figures (esp. fig 1) and captions

Title, bank, 1st ~~and~~ ^{say} different things

Technicals - crossheads - tags (see Rita)

Moral lecture on correct level. printout of file

Dealing w/ authors: phone only when really
stuck - don't know what
they're saying.

Don't be too timid - more than copyedit; also content &
structure

Jeff is available for questions in Wash. DC

Figures - use NBL's electronic search engine
use electronic formats when possible

What could go wrong?

Involve freelancers earlier in solicitation and acquisition of revision.

Identify main theme(s) of article and bring them out.

True digressions can go into sidebars.

We edit heavily (compared to journals)

24 November 1998

Steve --

Better than the best written guidelines would be for me to discuss the process with the freelance article editors. As I indicated in earlier notes, I am willing to do that.

-- Jeff

-- Edit revised manuscript for publication, making sure it conforms to the author guideline sheet (length, reference and figure limits, for example) and house style as shown by published articles (summary/teaser sentence, subheadings, author note, references and figure captions, for example). Work with author in the process.

A figure and its caption should be a self-contained unit so as to deliver something meaningful to readers who look only at the illustrations.

-- Give edited article, in galley form, to copy editor for copyediting. Include edited figures.

-- Meet with art editor and present edited figures for final preparation.

-- Enter copy editor's changes into computer system.

-- Give result and final figures to editor to check.

-- Enter any further changes into computer system and send the corrected galleys and final figures to the author to check. Include offprint info sheet.

-- Enter the author's changes into computer system and give file to art editor to produce first pages.

-- Check and finalize the pages and give to final reader (Judy Barker) to check.

S 000111

16 November 1998

Steve --

Better than the best written guidelines would be for me to discuss the process with the freelance article editors. As I indicated in an earlier note, I am willing to do that.

-- Jeff

-- Work with author to obtain first manuscript.

-- Synthesize comments from editor, other internal reviewers, external reviewers and yourself. In most cases, ask the author for a revised manuscript.

-- Edit revised manuscript for publication, making sure it conforms to the author guideline sheet (length, reference and figure limits, for example) and house style as shown by published articles (summary/teaser sentence, subheadings, author note, references and figure captions, for example). Work with author in the process.

-- Give edited article, in galley form, to copy editor for copyediting. Include edited figures.

-- Meet with art editor and present edited figures for final preparation.

-- Enter copy editor's changes into computer system.

-- Give result and final figures to editor to check.

-- Enter any further changes into computer system and send the corrected galleys and final figures to the author to check. Include offprint info sheet.

-- Enter the author's changes into computer system and give file to art editor to produce first pages.

-- Check and finalize the pages and give to final reader (Judy Barker) to check.

S 000112

From: Jeff Schmidt
To: SBENKA
Date: Wed, Dec 2, 1998 3:12 pm
Subject: Freelancer info sheet

Steve --

I have now read the revised freelancer info pages, and I think all the important points are covered. (There is an extra close parens in items III and V.)

-- Jeff

CC: JSCHMIDT

S 000113

From: Jeff Schmidt
To: SBENKA
Date: Thu, Dec 3, 1998 11:48 am
Subject: I would like to participate . . .
. . . in today's freelancer meeting by telephone.
-- Jeff

CC: TGARY, JSCHMIDT

S 000114

From: Tonya Gary
To: Jeff Schmidt
Date: Thu, Dec 3, 1998 1:55 pm
Subject: Re: I would like to participate . . .

I'll let Steve know.

>>> Jeff Schmidt 12/03 11:48 AM >>>
. . . in today's freelancer meeting by telephone.

-- Jeff

S 000115

From: Stephen Benka
To: Barbara Levi, Bert Schwarzschild, Charles Day, G...
Date: Thu, Oct 21, 1999 6:23 PM
Subject: Authors nudged

At today's articles meeting, I mentioned having checked in with several authors. These are they, so no need to nag further:

Faiz Rahman - Superconducting detectors for astronomy
Peter Sigmund - Accelerated Ion Clusters
Gordon Thomas - Optical Communications
Warren Warren - Shaped Laser Pulses
Peter Toennies - Spectroscopy on Helium Droplets
Gail ter Haar - Acoustic Surgery
Peter Gruenberg - Layered Magnetic Structures

Andreas Mandelis's article should arrive very soon.

S 000116

PHYSICS TODAY

MEMO

TO: All *Physics Today* Staff
FROM: Steve Benka
SUBJECT: 2000 Editorial Production Schedule



10/29/99

The editorial schedule for producing Volume 53 of *Physics Today* is attached.

“Closing” means sending the editorial material to Brown Printing.

The dates in the “Final Closing” column are derived from Brown's production schedule, and generally allow the printed magazine to be completely mailed by the third business day before the first day of the cover month. The actual dates in that column apply only to closing the Table of Contents and the Annual Index. All other material closes earlier.

Each regular or occasional department has its own closing date, derived by counting business days backward from the “Final Closing” dates discussed above. Individual editors must determine and adhere to these deadlines. This departmental schedule is identical to last year's.

Feature articles will continue to close on a floating schedule, between the map day and minus-1 workday from final closing.

The map will be drawn seven days prior to the “Final Closing” date (rather than nine days, as previously).

Page counts must be completed at least one day ahead of the map.

Save and follow this schedule.

S 000117

PHYSICS TODAY PRODUCTION SCHEDULE -- 2000

ISSUE	PAGE COUNTS IN	MAP DRAWN	FINAL CLOSING
January	11/29/99	11/30/99	12/09/99
February	12/29/99	12/30/99	01/11/00
March	01/28/00	01/31/00	02/09/00
April	03/02/00	03/03/00	03/14/00
May	03/30/00	03/31/00	04/11/00
June	04/28/00	05/01/00	05/10/00
July	05/30/00	05/31/00	06/09/00
August	06/27/00	06/28/00	07/11/00
Buyers' Guide	06/23/00	06/26/00	07/07/00
September	08/01/00	08/02/00	08/11/00
October	08/29/00	08/30/00	09/11/00
November	09/29/00	10/02/00	10/11/00
December	10/30/00	10/31/00	11/09/00

DEPARTMENT TO CLOSE WORKDAYS FROM FINAL CLOSING (earlier than these is encouraged)

Table of Contents	0
Physics Update	- 1
Washington Reports	- 1
Physics Community	- 1
Search and Discovery	- 2
New Products	- 3
Letters	- 4
We Hear That (Gossip)	- 4
Obituaries	- 4
Books	- 6
Index (December only)	0
Meeting Preview	- 2
In Profile	- 5
Opinion	- 6
Reference Frame	- 6
Calendar	- 6

S 000118

PHYSICS TODAY

Offprints and Reprints 1998

Physics Today sends 100 offprints of each feature article to the author, free of charge. If there is more than one author, the 100 complimentary offprints are divided between co-authors. Offprints consist of actual pages of the magazine stapled together, and may include some advertisements and portions of other articles on reverse sides. If you wish to purchase additional offprints, you must order them before the magazine goes to press.

Physics Today does not provide covers, but you may order covers at your own expense—the actual cover of the magazine, a generic cover or a generic cover. The magazine cover will include an advertisement on the reverse side. The generic cover is a plain, glossy-white sheet with black text as follows:

Physics Today

Offprint Series

This article originally appeared in *Physics Today*

© 1998

American Institute of Physics

One Physics Ellipse, College Park, MD 20740-3843.

Reprints involve a special press set-up and run, and are therefore much more expensive than offprints, which are extensions of the magazine's regular press run. Reprints can be in black and white or in color. Covers are available as for offprints.

For information on current prices and ordering information, please contact:

Tonya Gary

Physics Today

One Physics Ellipse

College Park, Maryland 20740-3843

301-209-3042

301-209-0842 (fax)

tgary@aip.org (e-mail)

S 000119



Orders are priced on a case-by-case basis

The American Physical Society
Optical Society of America
Acoustical Society of America
The Society of Rheology
American Association of Physics Teachers
American Crystallographic Association
American Astronomical Society
American Association of Physicists in Medicine
American Vacuum Society
American Geophysical Union



AMERICAN INSTITUTE OF PHYSICS
ONE PHYSICS ELLIPSE, COLLEGE PARK, MARYLAND 20740
(301) 209-3040

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11/96

S 000120

AUTHOR GUIDELINES FOR *PHYSICS TODAY*

Content: In general, a feature article in *Physics Today* is an authoritative overview. We expect fair and balanced treatment of various research efforts worldwide, as appropriate.

Style: We prefer an informal, conversational style to a dry journal or textbook style. Our readers all have some physics background, but only a very small percentage are experts in your field. A deep conceptual discussion is far better than a plethora of technical details; avoid writing for colleagues in your own field or in the style of your favorite research journal. The audience is wider than that.

We recognize that sometimes "an equation is worth a thousand words," but avoid the gratuitous use of equations.

Be sure to define any jargon that may be unfamiliar to nonexpert readers.

We encourage the uniform use of SI units. An excellent, brief guide to such usage is provided in our annual *Buyers' Guide* that accompanies the August issue of *Physics Today*.

Please include an individual's first name on first mention in the text.

Please keep your use of acronyms to a minimum.

Please use two spaces between sentences.

Length: No more than 4000 words, including sidebars but excluding references and figure captions. This limit may require some difficult decisions about what topics to include or exclude. Sacrificing technical detail often makes an article more readable, especially to those outside the field—the vast majority of our readers. We encourage use of sidebars and boxes for technical, historical or other digressions. You may find it useful to work from an outline, with a "word budget" for each section and sidebar. We encourage and appreciate shorter articles (3000-3500 words), as they are more likely to be read by the average reader.

Figures: We will need four to six, and we encourage you to think about them and their captions right from the start. Our art department and editors can help you develop them if you like. Because space is limited, please minimize your use of ~~large~~ multicomponent figures. The cover image is an open competition every month; if you have a candidate, please submit it. Also, be sure to provide the proper credit for your figures.

References: No more than eighteen. Think of them as "Further Reading" to guide the interested reader. We encourage citing, in addition to seminal historical papers and truly groundbreaking new papers, only review papers, books, and the like. We discourage many individual citations of detailed research; when such work is mentioned in the text, however, the individuals and their institutions should be named, to provide proper credit and direct the interested reader in the absence of a reference.

Example: Some recent "model articles" can be found in August 1998 (p 26, on high-pressure physics; p 34 on etching), and September 1998 (p 22, on tribology; p 36, on diamagnetism) all of which are at about the right level and make fine use of graphical material and sidebars.

Thank you for your cooperation.

S 000121

From: Susan Funk
To: SBENKA, JBARKER, GCOLLINS, PELLIOT, TFEDER, CHARRI...
Date: 8 May 1997 (Thu) 17:36
Subject: Q&A Staff Meeting, Brown Bag Lunch, Tuesday, 13 May

Our bi-weekly Q&A will be held in the 3rd Floor Conference Room on Tuesday, 13 May 1997 from 11:30am to 2:00pm. This will include a BROWN BAG lunch to continue our discussion of deadlines and schedules. Please bring a lunch to join in this discussion--attendance is voluntary.

Many thanks, Susan

S 000122

From: Tonya Gary
To: Jeff Schmidt
Date: Wed, Apr 19, 2000 10:31 AM
Subject: Articles Status

Please indicate the status of the following articles as well as any that I might not have listed. Also, provide the name(s) of any outside reviewers:

Hasselgren, Lennart
Moran-Lopez, Jose Luis
Parker, Eugene
Smith, Neville
Thomas, Gordon

If any of these are considered "Dead", then indicate that also.

Thanks.

S 000123

From: Jeff Schmidt
To: TGARY
Date: Thu, Apr 20, 2000 1:40 PM
Subject: Articles Status -Reply

Hi Tonya,

Below are some answers to your questions.

Jeff

>>> Tonya Gary 04/19/00 10:31am >>>

Please indicate the status of the following articles as well as any that I might not have listed. Also, provide the name(s) of any outside reviewers:

Hasselgren, Lennart *****Hasselgren has the reviews and is revising his article.*****

Moran-Lopez, Jose Luis *****Moran-Lopez has the reviews and is revising his article.*****

Parker, Eugene *****I have the revised manuscript and am editing it for the next issue.*****

Smith, Neville *****Last I heard, we were waiting for something to come in. Let me know if you have more recent information.*****

Thomas, Gordon *****I have comments from Barbara, but not yet from Steve or from an external reviewer. I don't know if the article has been sent to an external reviewer.*****

If any of these are considered "Dead", then indicate that also.

Thanks.

CC: jschmidt

S 000124

From: Jeff Schmidt
To: o.mime("hoaglandcary@juno.com")
Date: Wed, May 3, 2000 2:49 AM
Subject: Editing -Reply

Hi Cary,

Thanks for the message. I'm happy to see that you are still getting work at PT, on the book list. I don't know if we will need help copyediting feature articles. That will probably depend on how the new copyeditor perceives her workload. It's too early to say.

Jeff

CC: jschmidt

S 000125

From: Sharon Quarles
To: Dr. James Stith, Geraldine Terrelonge, Gigi Swar...
Date: Wed, Jan 19, 2000 1:18 PM
Subject: Holiday Luncheon

This is a reminder that the Brown Printing holiday luncheon is tomorrow, Jan 20, at 12pm in Conference A. Those who have indicated that they will attend are listed below. Please let me know if there is any change.

FYI, the list of Brown attendees is also listed.

American Institute of Physics Attendees
Richard Baccante (pending inclement weather in Melville)
Judy Barker
Jeff Bebee
Stephen Benka
Terri Braun
Marc Brodsky
Stephanie Campbell
Sandra Daniel
Charles Day
Richard Fitzgerald
Tonya Gary
Irwin Goodwin
Bo Hammer
Gloria Klahr
Abby Klar
Gloria Lubkin
Ken McNaughton
Randy Nanna
Monica Oliver
Elliot Plotkin
Peter Pulsifer
Sharon Quarles
Kiera Robinson
Jeff Schmidt
Bert Schwarzschild
Marian Smith
James Stith
Geraldine Terrelonge
Rita Wehrenberg
Margaret Wiley

- > Brown Printing Company Attendees
- > Don Beckwith - Customer Service Manager
- > Frieder deBiasi - Vice President Operations/General Manager - East
- > Greenville Division
- > Joe Hruby - Systems Manager/Trainer
- > Robin Mattson - Senior Sales Representative - Mid Atlantic Sales
- > Dan McCormick - Vice President - National Accounts
- > Dan Nitz - President
- > Jean Van Rossum - Account Manager
- > Bob Waterman - National Account Manager

S 000126

CC: Jennifer Jones

S 000127

From: Tonya Gary
To: Editors
Date: Fri, Mar 10, 2000 11:20 AM
Subject: Additional Solicitations

Here are two new solicitations to add to your Articles at a Glance, which was e-mailed to you earlier in the week.

Andrei Sakhrov and the Nuclear Danger – Sid Drell (Steve)
Career Opportunities in Optics – Anthony Johnson (Steve)

S 000128

From: Tracey Palmer
To: ACP ONLY
Date: Wed, Mar 8, 2000 3:30 PM
Subject: Fwd: Copenhagen

Please read the following message by Phil Shewe from AIP's Public Information. Thank you.

S 000129

From: Phil Schewe
To: Palmer, Tracey
Date: Wed, Mar 8, 2000 2:48 PM
Subject: Copenhagen

Dear ACP colleague:

In a few weeks a play about physics will have its debut on Broadway. The play, Copenhagen, is about a meeting, during World War II, between Werner Heisenberg (who was at that time the chief physicist on the German project to build an atom bomb) and Niels Bohr (who would later be at least peripherally be involved with the making of the Allied atom bomb).

We invite you to a reading of this play (the first half of the play anyway) here at ACP with the following cast: Bert Schwarzschild as Bohr, Sara Schechner as Mrs. Bohr, and Phil Schewe as Heisenberg.

When: 12 noon, Wednesday, March 15

Where: Conference room B

The reading will be preceded by a short historical introduction by Spencer Weart and will be followed by a discussion. Please bring your lunch.

For more information contact Phil Schewe at 3092.

S 000130

From: Jeff Schmidt
To: PELLIOT
Date: Mon, Mar 13, 2000 6:49 PM
Subject: Extension

Hi Paul,

I'm happy to hear (from Toni) that you are staying on the job for a few more days. So I'll see you in the office on Wednesday.

Jeff

CC: JSCHMIDT

S 000131

From: Jeff Schmidt
To: TGARY
Date: Wed, Mar 1, 2000 12:52 AM
Subject: Status of articles -Reply

Hi Tonya,

Lieb -- You know the status of that one better than I do. Lieb flees the country after this week.

Brenner -- I am in regular contact with the authors as they revise their manuscript. So far, they have been making fast enough progress to make it into the May 2000 issue. I am optimistic that they will keep it up.

Parker -- I have an inquiry in with him asking when we can expect to receive a revised manuscript.

Thomas -- I am reading the manuscript now. Barbara has completed her review. I don't know if Steve has read it yet or if he has sent it out for review.

Moran-Lopez -- Out for external review.

Hasselgren -- I am inquiring with the second external reviewer as to his expected date of completion. And I have an inquiry in with the first reviewer asking whether or not we should wait for the second review.

Graham -- We should send Loren Graham a formal invitation to write the article, which will cover topics from his book, as we have discussed at article meetings. His address is Program in Science, Technology, and Society; Room E51-163; Massachusetts Institute of Technology; Cambridge, MA 02139. Please let me know when the letter goes out and whether or not it includes the author guidelines.

Jeff

CC: jschmidt

S 000132

From: Jeff Schmidt
To: ACP(RMAGNO)
Date: Wed, Feb 16, 2000 11:55 AM
Subject: Printing from the browser -Reply

Ray --

Thank you for doing the experiment, diagnosing the problem and coming up with a solution.

I feel lucky that the problem appeared for you, because so often computer problems magically disappear in your presence and reappear when you leave!

-- Jeff

CC: ACP.ACP(PDAMATO), jschmidt

S 000133

From: Jeff Schmidt
To: squarles
Date: Mon, Feb 7, 2000 11:08 AM
Subject: 22 Feb Ask the Publisher Mtg -Reply

Hi Sharon,

As I mentioned in my message of 27 January 2000, the AAAS meeting is 17 - 22 February 2000.

Jeff

CC: jschmidt

S 000134

From: Jeff Schmidt
To: MDSMITH
Date: Thu, Feb 3, 2000 10:49 AM
Subject: Subscription for The Chronicle of Higher Education -Reply

I think we should go for the two-year subscription.

Jeff

CC: jschmidt

S 000135

From: Jeff Schmidt
To: squarles
Date: Thu, Jan 27, 2000 11:40 AM
Subject: Ask the Publisher Mtg -Reply

Hi Sharon,

I plan to attend the AAAS meeting in February. According to a 2 December 1999 e-mail message from Tonya, the meeting is 17 - 22 February 2000.

Jeff

CC: jschmidt

S 000136

From: Jeff Schmidt
To: SBENKA
Date: Wed, Jan 19, 2000 12:56 AM
Subject: Editor needed for Schuller's article -Reply

> ... If you want more info, Tonya can show you the file....

Steve --

I do want more info before deciding. If this article is still unassigned, I would like to look at the file on Thursday, before the articles meeting.

-- Jeff

CC: jschmidt

S 000137

From: Stephen Benka
To: Jeff Schmidt
Date: Fri, Jan 7, 2000 12:03 PM
Subject: Re: Copyeditor guidelines -Reply

Thanks. I'll add that.

>>> Jeff Schmidt 01/07 12:03 PM >>>
Steve --

The guidelines look good. If we want more detail, and I am not sure that we do, we could mention this: In articles with numbered figures, make sure all figures are mentioned in the text, in numerical order.

-- Jeff

S 000138

From: Jeff Schmidt
To: SBENKA
Date: Fri, Jan 7, 2000 12:03 PM
Subject: Copyeditor guidelines -Reply

Steve --

The guidelines look good. If we want more detail, and I am not sure that we do, we could mention this: In articles with numbered figures, make sure all figures are mentioned in the text, in numerical order.

-- Jeff

CC: jschmidt

S 000139

From: Jeff Schmidt
To: SBENKA
Date: Mon, Feb 7, 2000 8:11 PM
Subject: No need for copyediting right now

Steve --

Thanks for asking if I have any material for a temp copyeditor. I don't at this time. (Lieb is already with Cary Hoagland.) The sooner I know that we have scheduled a temp copyeditor, the greater the chance that I will have work for him or her.

-- Jeff

CC: jschmidt

S 000140

From: Melinda Underwood
To: AIP PERSONNEL
Date: 2 Nov 1998 (Mon) 10:24
Subject: Employee Benefits Meeting and Open Enrollment Meeting

REMINDER:

Employee Benefits Meeting (announcement of changes w/United Healthcare, HR website, Flexible Spending Programs, etc).
Conference Room C
November 6
2:00 PM-3:00 PM
(The 10:00 AM meeting is already full)

AND

Open Enrollment Meeting (Insurance carrier presentation and materials)
Conference Room A
November 11
9:00 AM (Breakfast provided)
or
12 PM (Lunch provided)

We encourage everyone to attend both the Employee Benefits Meeting and the Open Enrollment Meeting for questions and/or concerns. If you have not done so already, please sign up by Tuesday--November 3rd.

Thanks,
Melinda

S 000141

From: Jeff Schmidt
To: TGARY
Date: Tue, Dec 14, 1999 12:42 AM
Subject: Articles meeting

Hi Tonya,

Being on vacation, I will miss the articles meeting on Thursday. So, if it isn't too late to do so, please delete from the agenda my article proposal and the backup material (the copy of the Washington Post article by Daniel Greenberg). It should go on the agenda for the January articles meeting.

Thanks,

Jeff

CC: jschmidt

S 000142

From: Stephen Benka
To: PT
Date: Thu, Dec 23, 1999 10:14 AM
Subject: PT a hit in Germany

This week's issue of *Der Spiegel*, the big-time German news weekly magazine, devotes a full page to *Physics Today*'s article on cooking meat, by Harold McGee, in the November issue. "Physics Today" is mentioned, in English, within the bank, just below the headline.

You can read it on-line at
<http://www.spiegel.de/spiegel/nf/0,1518,56865,00.html>

--Steve

CC: Dr. James Stith, Marc Brodsky, Randy Nanna

S 000143

From: Paul Elliott (Paul Elliot)
To: Jeff Schmidt
Date: Tue, Nov 16, 1999 4:32 PM
Subject: Pietronero Letter

Gloria and Jeff,

Luciano Pietronero sent in a letter commenting primarily on Bernholc's September article and also on Anderson's September "Reference Frame." You both thought the letter should be shortened and simplified. Pasted in below is Pietronero's revision. Does this rewrite--at 675 words it's about 200 words shorter than the original--seem better? Acceptable? (If you want to make a direct comparison, I can send you a copy of the original.)

(Bernholc gets to reply; Anderson doesn't--his essay is just a jumping-off place.)

Paul

Pietronero Letter to the Editor (November 16, 1999)
(This is the revised version, shorter and less technical)

In the Physics Today of September 99 the provocative statement of Anderson (Reference Frame, p.11) according to which "computational physics" should be considered as an oxymoron is challenged a few pages later by the article of J. Bernholc (Computational Materials Science: The Era of Applied Quantum Mechanics, p.30) which describes the role of computational material science by giving three examples: superconductivity in the fullerene compounds, polycrystalline silicon and magnetism in low-symmetry systems. The last two examples appear to me reasonable but I am not an expert in those fields. The fullerene case instead is strongly misleading and it sets an example for Anderson's point of view. The article gives the impression that ab initio first principle calculations have permitted to clarify the microscopic origin of superconductivity in the C60 compounds as due to the large electron-phonon interaction arising from the curvature of the molecule. In addition there is also a prediction that C36 compounds should superconduct at much higher T_c due to the even larger curvature. The fact that there is no trace of this effect in real materials is then explained as due to difficulties in the preparation.

Fullerene superconducting compounds appeared in the early nineties. Their values of T_c , exceeding 30K were second only to the oxides and surpassed all the standard materials. Contrary to the oxides they showed a relatively large isotope effect and this seemed to point towards the traditional BCS theory. In this perspective, however, one could compare the Fullerenes with graphite intercalation compounds which are extremely similar in most properties but are superconductors only for much smaller T_c (less than 1K). One of the few differences appeared to be the curvature, graphite is made by layers while Fullerene is a soccer ball, and attention focused on this property in the spirit of "what else can it be?". Then quick calculations were performed of the electron-phonon coupling of Fullerene and it was declared that the results were compatible with experiments (1). To appreciate the arbitrariness of this statement one has to consider that, in the BCS theory, the value of T_c depends exponentially on the el-ph interaction and, considering a reasonable error bar, say 30%, a certain value of the coupling can be compatible with values of T_c ranging from 1 to 50K. This desire of "normalization" (in the sense of Anderson) for the Fullerenes superconductivity led to overlooking completely the following essential facts which cannot be addressed within the methods discussed by Bernholc's:

- The phase diagram shows that only A3C60 is metallic while A4C60 and the other compositions are insulators.
- Fullerene compounds have a very small carrier density (as the oxides) and this is very difficult to understand in the BCS perspective because the small carrier density leads to a small density of states and to weak screening of the Coulomb interaction (2).
- Finally the BCS or Migdal-Eliashberg theory is intrinsically inconsistent for these systems. In fact in all

Fullerenes compounds the principle of adiabaticity (Migdal's theorem), on which BCS theory is based, is strongly violated and this calls for a generalization of the theory to the nonadiabatic regime which, in our opinion (3), is the real reason for the high T_c values. In this perspective, contrary to Bernholc's discussion, we predict that an eventual C36 compound with broader bands would not lead to high T_c values.

In summary I agree with Bernholc that C60 and C36 compounds are extremely interesting materials. Their superconductive properties, however, are much more complex and interesting than he describes and, up to now, first principle calculations have contributed little to their understanding.

References:

1. See for example various contributions in: Solid State Physics, V48 Eds. H. Ehrenreich and F. Spaepen, (Academic, New York 1994)
2. O. Gunnarsson, Rev. Mod. Phys. V69, 575 (1997)
3. C. Grimaldi, L. Pietronero and S. Strassler, Phys. Rev. Lett. V75, 1158 (1995); Phys. Rev. B52, 10516 and 10530 (1995)

Luciano Pietronero
Universita' di Roma "La Sapienza"
Roma, Italy
E-mails: pietronero@roma1.infn.it

S 000145

From: Jeff Schmidt
To: PELLLOT
Date: Thu, Nov 18, 1999 11:43 AM
Subject: Pietronero Letter -Reply

Paul --

Luciano Pietronero's letter still seems somewhat long on technical detail. But I think that with the shortening that has been done, it is now on the borderline of publishability. So, if for whatever reason you cannot go back to the author and ask for yet more shortening, and you have to simply choose between publication and rejection of the present version, I would choose publication. If you have the resources to pursue further revision, then one way to proceed might be to get Bernholc's opinion as to whether Pietronero is at least wrong -- that is, whether Pietronero's concerns are legitimate (although perhaps wrong in Bernholc's view) rather than just nonsense. If Bernholc says "nonsense," then we would have to get a third-party opinion.

-- Jeff

[ps -- for some reason your e-mail on Pietronero causes intermittent computer problems; I'm sending this message during a problem-free period; I hope it gets through.]

CC: jschmidt

S 000146

From: Paul Elliott (Paul Elliot)
To: Jeff Schmidt
Date: Mon, Dec 13, 1999 2:05 PM
Subject: Re: Pietronero Letter -Reply

Jeff,

Yes, this got through, thanks (belatedly). I'm about to ask Bernholc for his opinion.

Paul

>>> Jeff Schmidt 11/18/99 11:43:30 AM >>>
Paul --

Luciano Pietronero's letter still seems somewhat long on technical detail. But I think that with the shortening that has been done, it is now on the borderline of publishability. So, if for whatever reason you cannot go back to the author and ask for yet more shortening, and you have to simply choose between publication and rejection of the present version, I would choose publication. If you have the resources to pursue further revision, then one way to proceed might be to get Bernholc's opinion as to whether Pietronero is at least wrong -- that is, whether Pietronero's concerns are legitimate (although perhaps wrong in Bernholc's view) rather than just nonsense. If Bernholc says "nonsense," then we would have to get a third-party opinion.

-- Jeff

[ps -- for some reason your e-mail on Pietronero causes intermittent computer problems; I'm sending this message during a problem-free period; I hope it gets through.]

S 000147

From: Stephen Benka
To: Abby Klar, Barbara Levi, Bert Schwarzschild, Cha...
Date: Fri, Dec 17, 1999 9:11 AM
Subject: Fwd: PT

Here's a nice note from Larry Crum.
--Steve

CC: Dr. James Stith, Jak@interport.net, Randy Nanna

S 000148

From: "Lawrence A. Crum" <lac@apl.washington.edu>
To: AIP_NY.AIPgate("steveB")
Date: Wed, Dec 15, 1999 1:44 AM
Subject: PT

Steve,

Loved the "Everyday Physics" issue. I read every article. Thought they all had just the right balance of physics and general interest. And I thought Jean K. did a specially nice job on the Kansas Bd of Ed thing. An excellent issue. Best, Larry

Lawrence A. Crum
Applied Physics Laboratory
University of Washington
1013 NE 40th Street
Seattle, WA 98105

206 685 8622 T
206 685 8621 fax

lac@apl.washington.edu

S 000149

Received: from pinet.aip.org
([192.58.150.10])
by aip.org; Tue, 14 Dec 1999 13:44:34 -0500
Received: from kraken.apl.washington.edu (kraken96.apl.washington.edu [128.95.96.25])
by pinet.aip.org (8.9.1a/8.9.1) with ESMTP id NAA24571
for <steveB@aip.org>; Tue, 14 Dec 1999 13:44:50 -0500 (EST)
Received: from [128.95.97.208] (ppp-C8.apl.washington.edu [128.95.97.208])
by kraken.apl.washington.edu (8.9.1/8.9.1) with ESMTP id KAA03061
for <steveB@aip.org>; Tue, 14 Dec 1999 10:44:45 -0800 (PST)
Mime-Version: 1.0
X-Sender: lac@kraken.apl.washington.edu (Unverified)
Message-Id: <v04210102b47ce8170965@[128.95.97.202]>
Date: Tue, 14 Dec 1999 22:44:17 -0800
To: steveB@aip.org
From: "Lawrence A. Crum" <lac@apl.washington.edu>
Subject: PT
Content-Type: text/plain; charset="us-ascii"; format="flowed"

Steve,

Loved the "Everyday Physics" issue. I read every article. Thought they all had just the right balance of physics and general interest. And I thought Jean K. did a specially nice job on the Kansas Bd of Ed thing. An excellent issue. Best, Larry

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From: Jeff Schmidt
To: TGARY
Date: Mon, Dec 20, 1999 10:50 AM
Subject: December 20-23 and December 27-30 -Reply

>>> Tonya Gary 12/17/99 09:26am >>>
Where will you be for the next two weeks?

I'm not yet sure. Maybe I'll know more tomorrow.

Jeff

CC: jschmidt

S 000151

From: Paul Elliott (Paul Elliot)
 To: Jschmidt
 Date: Mon, Dec 20, 1999 11:51 AM
 Subject: Ceder Letter and Bernholc Reply

Jeff,

Here's Jerry Bernholc's reply to Gerd Ceder's letter (appended). It looks good to me, and it being longer than the letter is fine, given that it amplifies rather than argues or disputes. What say you (even if you are on vacation)?

Paul

 Bernholc replies:

Although many problems can be addressed solely by atomistic simulations, there are many that cannot, due to either length or time scales involved. As Gert Ceder points out, empirical and nonquantitative models provided and continue to provide important guidance in such cases. However, one of the main emerging theoretical thrusts are multiscale methods, where microscopic information from atomistic simulations is combined with continuum mechanics or Monte Carlo methods to obtain the required coarse-graining. The first - too long - version of my article contained a section on such methods. Although multiscale methods are still emerging, good progress is being made [1]. Ideally, multiscale calculations would proceed in the manner analogous to the multigrid method, where the information from the coarsened solutions is used to recursively accelerate the progress on the finer scales and vice versa. However, a number of methodological aspects still need to be developed. Turning to the specific example of "strength", let's focus on the nanotube example discussed in my article. *Ab initio* and classical simulations [2] predicted that nanotubes are thermodynamically stable at strains up to 5-6%, and kinetically metastable at significantly greater strains. Although it has not yet been possible to simulate the entire fracture process at realistic time scales, the "minimum strength" prediction is still quite useful. Recent measurements in Richard Smalley's [3] and Charles Lieber's groups show that carbon nanotubes can sustain at least 5% strain - the "strongest" material known! The progress in computers has affected the article in another, much less desirable way. Alex Zettl's name was changed to Alex Seattle by an overconfident computer spelling checker. At least one of us feels profoundly sorry and apologizes for his failure to read the corrections one more time.

[1] R. E. Rudd and J. Q. Broughton, Phys. Rev. B 58, R5893 (1998); E. B. Tadmor, G. S. Smith, N. Bernstein and E. Kaxiras, Phys. Rev. B 59, 235 (1999).

[2] M. Buongiorno Nardelli, B. I. Yakobson, and J. Bernholc, Phys. Rev. B 57, R4277 (1998).

[3] D. A. Walters et al, Appl. Phys. Lett. 74, 3803 (1999).

@hed1:Ceder

@initial: Although we must be impressed by the ingenuity that is often displayed in large-scale *ab initio* simulation, the road from breaking a solid or molecule in a simulation to the engineering concept of "strength" is a long one, and unlikely to be traversed by using simulations only. Similarly, other relevant engineering properties, such as corrosion and fracture resistance, phase (meta)stability, microstructure formation, and macroscopic transport, are often a complex

S 000152

(and unknown) combination of microscopic phenomena.

What is the problem? Due to the lack of microscopic information, materials science and engineering has historically developed as an empirical and nonquantitative discipline. Now that advances in computational quantum mechanics have made detailed microscopic information available, we find ourselves searching for quantitative materials theories with which to integrate it. The true challenge, therefore, is to develop theories that will lead to the systematic coarse graining of microscopic phenomena into macroscopic behavior. The problem, then, is one of detailed knowledge of the phenomena at the intermediate scale, rather than one of computational quantum mechanics.

@signature:Gerd Ceder

@address:(gceder@mit.edu)

@address:Massachusetts Institute of Technology

@address:Cambridge, Massachusetts

S 000153

From: Jeff Schmidt
To: PELLIOT
Date: Tue, Dec 21, 1999 12:05 AM
Subject: Ceder Letter and Bernholc Reply -Reply

Hi Paul --

Bernholc's reply seems somewhat long, especially because interest in it will be confined mainly to those of our readers who read Bernholc's article. Otherwise I think it is ok for publication. We don't require that all letters appeal to all readers (although the closer we come to that, the better), so if you think the length is not a problem, then go ahead with it. I'd change a word or two in the part about Zettl's name, to make it clearer that Bernholc is talking about his own computer, not PT's. Perhaps just change "corrections" to "manuscript."

-- Jeff

CC: jschmidt

S 000154

From: Paul Elliott (Paul Elliot)
To: Jeff Schmidt
Date: Tue, Dec 21, 1999 12:27 AM
Subject: Re: Ceder Letter and Bernholc Reply -Reply

Thanks, Jeff.

Paul

>>> Jeff Schmidt 12/21/99 12:05:20 AM >>>
Hi Paul --

Bernholc's reply seems somewhat long, especially because interest in it will be confined mainly to those of our readers who read Bernholc's article. Otherwise I think it is ok for publication. We don't require that all letters appeal to all readers (although the closer we come to that, the better), so if you think the length is not a problem, then go ahead with it. I'd change a word or two in the part about Zettl's name, to make it clearer that Bernholc is talking about his own computer, not PT's. Perhaps just change "corrections" to "manuscript."

-- Jeff

S 000155

From: "Barbara Levi" <bgl@worldnet.att.net>
To: "Barbara Levi" <bgl@worldnet.att.net>, "Bert Schwa...
Date: Wed, Dec 22, 1999 3:22 AM
Subject: FW: 990930 Criticality Accident Update Notes: Fatality

Sad news about the most severely overexposed victim at Tokaimura. He had a terrible struggle.

Barbara

-----Original Message-----

From: Valerie L Putman/VPUTMAN/LMITCO/INEEL/US [mailto:VPUTMAN@inel.gov]
Sent: Tuesday, December 21, 1999 2:28 PM
To: Liang Liang
Subject: 990930 Criticality Accident Update Notes: Fatality

I am sorry to announce the death of the most severely overexposed worker in the 990930 criticality accident at the JCO plant in Tokaimura, Japan. The (last) direct cause was apparently heart failure at 11:21 p.m. Tuesday night (Tokyo local time), 83 days after the accident.

MOST INFORMATIVE NEWS ARTICLES APPEAR TO BE:

[Daily Yomiuri 991222]
Irradiated JCO worker dies after 83-day battle
<http://www.yomiuri.co.jp/newse/1225cr05.htm>

[AP 991221]
Japan Man Exposed to Radiation Dies
You can access the on-line AP article by selecting an AP member/subscriber (I use Los Angeles Times) at site
<http://wire.ap.org/?FRONTID=HOME&SITE=PAREA>
selecting search from the menu and then searching for the term JCO.
Sometimes you must select a search of the AP Wire rather than of a AP Archive.
also at

http://www.boston.com/dailynews/355/world/Worker_exposed_to_radiation_in::sh
tml
<http://abcnews.go.com/sections/world/dailynews/japannuclear991221.html>

http://flash.al.com/cgi-bin/al_nview.pl?/home1/wire/AP/Stream-Parsed/INTERNATIONAL/a0586_AM_Japan-NuclearAccident
and many others

[BBC 991221]
Japan nuclear worker dies
<http://news2.thls.bbc.co.uk/hi/english/world/asia%2Dpacific/newsid%5F574000/574311.stm>

S 000156

OTHER/REDUNDANT NEWS ARTICLES:

[Japan Times 991221]

JCO worker Ouchi dies of heart failure

<http://www.japantimes.co.jp/topnews.html>

[Kyodo News 991222]

00:36 Obuchi vows efforts to prevent nuke accidents -TOKYO

00:01 Worker exposed to radiation at Tokaimura dies -TOKYO

<http://home.kyodo.co.jp/>

IN RELATED NEWS:

[Daily Yomiuri 991222]

JCO drains uranium solution

<http://www.yomiuri.co.jp/newse/1225cr07.htm>

S 000157

Received: from pinet.aip.org
([192.58.150.10])
by aip.org; Wed, 22 Dec 1999 03:23:27 -0500
Received: from mtiwmhc09.worldnet.att.net (mtiwmhc09.worldnet.att.net [204.127.131.18])
by pinet.aip.org (8.9.1a/8.9.1) with ESMTP id DAA10524;
Wed, 22 Dec 1999 03:23:42 -0500 (EST)
Received: from oemcomputer ([12.72.158.79]) by mtiwmhc09.worldnet.att.net
(InterMail v03.02.07.07 118-134) with SMTP
id <19991222082311.ZQRQ10418@oemcomputer>;
Wed, 22 Dec 1999 08:23:11 +0000
From: "Barbara Levi" <bgl@worldnet.att.net>
To: "Barbara Levi" <bgl@worldnet.att.net>,
"Bert Schwarzschild" <bschwarz@aip.org>, "Chas Day" <cday@aip.org>,
"Elliot Plotkin" <eplokin@aip.org>, "Gloria Lubkin" <glubkin@aip.org>,
"Graham Collins" <gcollins@aip.acp.org>,
"Irwin Goodwin" <goodwin@aip.org>, "Jean Kumagi" <jak@interport.net>,
"Jeff Schmidt" <jschmidt@aip.org>, "Judy Barker" <jbarker@aip.org>,
"Paul Elliott" <pelliot@aip.org>,
"Rita Wehrenberg" <rwehrenb@aip.acp.org>,
"Steve Benka" <sbenka@aip.org>, "Toni Feder" <tfeder@aip.org>
Subject: FW: 990930 Criticality Accident Update Notes: Fatality
Date: Wed, 22 Dec 1999 00:22:59 -0800
Message-ID: <LPBBKCANPKLKMNLHBCOIAEJJCCAA.bgl@worldnet.att.net>
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit
X-Priority: 3 (Normal)
X-MSMail-Priority: Normal
X-Mailer: Microsoft Outlook IMO, Build 9.0.2416 (9.0.2910.0)
Importance: Normal
X-MimeOLE: Produced By Microsoft MimeOLE V5.00.2615.200

S 000158

From: Jeff Schmidt
To: PELLIOT
Date: Fri, Oct 29, 1999 1:54 AM
Subject: De letter review

Hi Paul,

Here is my review of the De letter.

Jeff

Recommendation: Reject De letter

De notes that the scientific community either refuses to publish his work or publishes it and then ignores it. In either case, the larger scientific community doesn't deal with his work. His letter raises the interesting question of what it takes to engage scientists in debate.

Physics Today has been deficient in covering this issue. Unfortunately, De's letter alone doesn't give the subject full enough treatment to justify publication. We would need to include an answer De's letter, arguing, among other things, that scientists don't have time to refute everything that they consider to be wrong. And we would need an answer to that answer, asking what it takes to get scientists to spend time on a debate.

Jeff
29 Oct. 99

CC: jschmidt

S 000159

From: Jeff Schmidt
To: SBENKA
Date: Fri, Oct 29, 1999 5:35 PM
Subject: Update material for the month -Reply

Steve --

Here are my rankings of the update candidates.

-- Jeff

3 -- SANDSTONE TORTUOSITY. [Say how long the nuclei retain their orientation.]

5 -- WAVY MICROSTRUCTURES

4 -- EXTRA INVISIBLE DIMENSIONS

1 -- WAVE PROPERTIES OF BUCKYBALLS

2 -- VACUUM TUBES ATTEMPT A COMEBACK

6 -- THE OXYGEN RED PHASE

CC: jschmidt

S 000160

From: Paul Elliott (Paul Elliot)
To: ptall, JBARKER@ACP.AIP, SBENKA@ACP.AIP, PELLIOT@AC...
Date: Fri, Mar 12, 1999 11:10 PM
Subject: PT STYLE

Greetings:

Starting with the May 1999 issue, we will be adopting and making several editorial style changes. The two most critical ones--in that they will involve much of our copy and will require some or most of us to give up deeply ingrained habits--are as follows:

- (1) Using the serial comma
- (2) Using only one space after end-of-sentence periods and all colons

During the coming week, I will prepare and distribute a list of the other style changes that were discussed at the last two monthly staff meetings and are scheduled to be implemented in the May issue.

Paul

CC: cday,l:lrubin@slipknot.mit.edu

S 000161

From: Sharon Quarles
To: Bert Schwarzschild, bgl@worldnet.att.net, Charles...
Date: Tue, Nov 2, 1999 12:00 PM
Subject: Randy Nanna & Gary Squires

Dr. Stith thought that it would be a good idea to have a luncheon for both Gary Squires (farewell) and Randy Nanna (welcome) on Tuesday, November 16th at around 12:30pm. Gary's official last day is still to be determined as he will be around to help Randy during his first week or so.

Is this a good day/time for everyone? (I should caution you that there is a Magazine Business Meeting scheduled from 10am - 12pm on the 16th and that the meeting may run a bit over. However, I think that 12:30pm is a fair estimate.)

Any suggestions for restaurants? Or would you rather order in? Please let me know by the end of this week.

Sharon

CC: Dr. James Stith, Kiera Robinson

S 000162

From: Jeff Schmidt
To: mwiley@aip.org
Date: Wed, Oct 13, 1999 1:26 PM
Subject: Semiannual purge

Hi Margaret --

Yes, I'd like to keep my UMD computer account active.

Thanks for your help,

Jeff Schmidt
User name: jeff
SSN: [REDACTED]

Peter Pulsifer, Physics Today
<ppulsife@aip.org>
(301) 209-3072

CC: jschmidt

S 000163

From: Stephen Benka
To: Barbara Levi, Bert Schwarzschild, Charles Day, E...
Date: Fri, Oct 29, 1999 2:35 PM
Subject: Gathering: Sunday, 7 November

To all PTers,

Shaila and I would like you to come to our house for PT party, on Sunday, 7 November, starting about 4:30 pm. This is during the Hindu "Festival of Lights," which is a great excuse for a gathering. Spouses or other companions are also welcome (but please, no children). We'll have lots of food (hot, mild, sweet) and both vegetarians and carnivores are welcome. Please let me know by next Tuesday (2 Nov) if you plan to come. I'll provide directions.

--Steve

S 000164

From: Jeff Schmidt
To: TGARY
Date: Fri, Oct 1, 1999 1:11 PM
Subject: Whereabouts - October 4-8, 1999 -Reply

Hi Tonya,

I have jury duty on Monday 4 October. I hope to come in to the office at least one day next week, but I won't know when until next week. It depends on what is happening with the Bloomfield and Leibler articles. So for your printed schedule, you can mark me down as working at home Tuesday through Friday.

Thanks for your help with the two articles yesterday and today.

Jeff

CC: jschmidt

S 000165

From: Jeff Schmidt
To: SBENKA
Date: Fri, Oct 1, 1999 12:35 PM
Subject: Nine Update candidates for Nov. -Reply

Steve --

Here are my rankings of the update candidates.

-- Jeff

4. CHILLING MIRRORS WITH LIGHT
5. COUNTING UP TO 100 MILLION
7. SEPARATING CHEMICAL ISOTOPES
2. LIQUID CRYSTAL ACOUSTICS
8. CLAY OSCILLONS
1. VISUALIZING ELECTRONIC ORBITALS
9. DARK MATTER ANNIHILATION AT THE GALACTIC CENTER
3. TO MEASURE LOCAL GRAVITY
6. NERVE CELLS MAY HOLD THEIR FIRE

CC: jschmidt

S 000166

From: Jeff Schmidt
To: MDSMITH
Date: Wed, Sep 15, 1999 10:56 PM
Subject: Scarani letter

Scarani letter -- Reject

Scarani offers a synthesis and mild critique of Physics Today articles on quantum mechanics, in the form of a pleasant essay or mini-Reference Frame. I don't see anything interesting enough here -- like a new point of view -- to justify publication. His two technical assertions (that HV is non-local and that CH doesn't always offer physical meaning) aren't his main points and don't add much to the letters we have already published.

Jeff
15 Sept. 99

CC: JSCHMIDT

S 000167

From: Jeff Schmidt
To: MDSMITH
Date: Fri, Sep 17, 1999 1:23 PM
Subject: Scarani Letter -Reply

Hi Marian,

Thanks for helping with the Scarani letter. I'm glad to see that you survived Floyd, which appears to have left us with great weather. So enjoy the weekend!

Jeff

CC: jschmidt

S 000168

From: Marian Smith
To: Jeff Schmidt
Date: Fri, Sep 17, 1999 11:37 AM
Subject: Scarani Letter

Hello Jeff,

I was not in the office yesterday due to the fury of Floyd. However, I printed the Scarani letter, put it in the folder, and placed the folder in Paul's office this morning. Paul is schedule to come into the office today. Have a great weekend.

S 000169

From: Tonya Gary
To: PT Staff
Date: Tue, Aug 31, 1999 4:50 PM
Subject: Staff Meeting Minutes

Attached are the minutes from the PT staff meeting which was held on Thursday, August 26.

CC: Dr. James Stith

S 000170

Staff Meeting Minutes

August 26, 1999

New Printer

Talks with Brown are going well and Dr. Stith received a good reference from one of their current customers. Representatives we will be visiting AIP on September 9 at Noon. Lori Carlin will also be on hand to discuss transition details. Initially, a 3-year contract will be signed.

Gary Squires has received ad page estimates for a print run and pages will be ordered.

Gloria raised the concern regarding printing extra copies for late-paying members, and Gary reassured her that extra copies will be printed which will cover the members as well as having available copies for events and trade shows.

According to Steve Benka, the October issue of PT will be printed at Lane, while the November and December issues will be printed at Brown. The production schedule will be finalized next week. The editorial schedule will follow.

Production

Elliot Plotkin received a new and better computer last week. The old computer will stay in PT. The Quark conversion is going well. All of the October issue, with the exception of 3 departments, should be the first published in Quark. A complete conversion should take place by December.

In addition, the November issue is going well with articles coming in on time. The index entries for January thru July are in, and the next batch will be going out soon.

Gloria inquired as to the number of pages that will be printed for the rest of the year. Gary indicated that the magazine will be the same size on average with possibly more editorial pages added. He believes that advertising will increase next year.

PT/TIP Reader Survey

A reader survey was recently conducted by Steve Benka and Gary Squires. The survey was used to obtain statistics on market trends and forecasting with regard to readership and actions, products and advertising. There were 1,000 surveys mailed with 520 returned. Due to a 52% response rate, the survey was closed out 2 weeks early. The final results will be available on Monday or Tuesday of next week. The survey was independently conducted by an outside research firm.

Publisher

S 000171

A candidate for the vacant publisher position is scheduled to visit PT on September 9 to meet with staff. The result of the meeting will determine whether to move forward pursuing other candidates.

Budget

Figures are being calculated for the 2000 budget, and around September 7th or 8th a more detailed observation will be made to determine where initial projections are. A new electronic system is being put in place to run the numbers, but not information is currently available.

A "realistic" budget has been put forth for PT including an additional support position for advertising and possibly TIP and web maintenance. Dr. Stith will have a better sense of how things stand by the Governing Board meeting in the fall.

Other

We should continue to think about the PT webpage. Also, think about PT and what it should like in the coming years. In the coming year, consider a 5-year plan and evaluate long-term goals for the magazine. The budget will play a part in that planning process.

Next Meeting: September 28, 2:00 pm

S 000172

From: Stephen Benka
To: Bert Schwarzschild, Charles Day, Jeff Schmidt, R...
Date: Mon, Aug 30, 1999 3:57 PM
Subject: Here's another

We have a draft of the article by Paul Alivisatos, "Colloidal Quantum Dots." Barbara and I have made extensive comments on it, but it hasn't yet gone to an outside reviewer. Any takers for this one?

--Steve

CC: Barbara Levi

S 000173

From: Jeff Schmidt
To: SBENKA
Date: Wed, Aug 25, 1999 11:30 PM
Subject: Update candidates (7 of them) -Reply

Steve --

Here are my rankings of the update candidates.

-- Jeff

6. IN-PLANE-GATE (IPG) TRANSISTORS
5. NUCLEAR THERMOMETER
1. GALAXY FORMATION IN AMOEBAS
2. X-RAY CRYSTALLOGRAPHY OF NON-CRYSTALS
4. SUPERSYMMETRY IN ATOMIC NUCLEI
3. NEW THEORY OF EPILEPSY
7. A LINEAR DECELERATOR FOR NEUTRAL MOLECULES

CC: jschmidt

S 000174

From: Raymond Chu
To: Ben Stein, Jeff Schmidt, Karen MacFarland
Date: Wed, Aug 4, 1999 10:26 AM
Subject: Booknotes on C-SPAN

Hies,

Jeff Schmidt was also on a tv show just as respectfully cerebral as Win BS Money. Jeff did not win any money, but his effort is just as worthy of recognition.

Either of you would not be on tv if it were not for the expansion of cable channels. Do we really need 100 channels??

Mr. Ray

S 000175

From: Jeff Schmidt
To: i:bstein@aip.acp.org
Date: Wed, Aug 4, 1999 2:39 PM
Subject: Re: Booknotes on C-SPAN -Reply -Reply

Hi Ben,

Thanks for the note. Yes, I vaguely remember saying, among other things, that IBM's fired, angry and disillusioned programmers were naive to trust the company in the first place, and that the author of the book being discussed shouldn't have praised them for not protesting their firing.

Jeff

CC: JSCHMIDT, RCHU

S 000176

From: Stephen Benka
To: Jeff Schmidt
Date: Tue, Aug 3, 1999 1:30 PM
Subject: Re: The Bernholc article

Jeff,

Yes, Jerry Bernholc's article is nice.

There is a finite probability that Bert will not be able to complete the Schucking article for the October issue, as he has the Barish article (also for October) and is continuing to produce Search stories. I would like the Birnbaum article to be available, if needed, for October. If we don't need it then, we'll definitely run it in December. Please give me an update on Birnbaum. thanks.

--Steve

S 000177

From: Sharon Quarles
To: Dr. James Stith, Gary Squires, PT Staff
Date: Thu, Jul 29, 1999 10:35 AM
Subject: Staff Meeting Agenda, 7/29/99

This is a reminder that we have a staff meeting today at 2pm in the 3rd floor conference room.

Agenda items include:

Quark update (Elliot Plotkin, Rita Wehrenberg, Chaz Day)
Printer update (Gary Squires, James Stith)
Publisher search update (James Stith)
Editorial Calendar for 2000 (Steve Benka)
1999 6-month index (Judy Barker)

CC: Kiera Robinson

S 000178

From: Tonya Gary
To: PT Staff
Date: Thu, Jul 29, 1999 3:17 PM
Subject: Timesheets

are due for the period July 18-31, 1999. Please let me know if you have taken leave/comp time or earned comp time that I may not be aware of.

Thank you.

S 000179

From: Stephen Benka
To: Bert Schwarzschild, bgl@worldnet.att.net, Charles...
Date: Fri, Jul 30, 1999 10:36 AM
Subject: URGENT: update items for Sept

Here, as an attachment, are the 13 Update candidates from Phil and Ben. Please rank them, add any useful comments, and return to me asap. Certainly by noon on Monday. Thanks.

I might write an update of my own, with a photo, on some recent magnetic levitation work of Andrey Geim (PT, Sept 98, p 36).

Let me know what you think of my distributing these by email.

--Steve

S 000180

From: Jeff Schmidt
To: SBENKA
Date: Mon, Aug 2, 1999 4:23 AM
Subject: URGENT: update items for Sept -Reply

Steve --

Here are my rankings of the update candidates.

-- Jeff

2. STAR MATERIAL DISCOVERED IN SOUTH PACIFIC.
4. ELECTROPHOSPHORESCENCE GETS THE GREEN LIGHT.
3. A RUDIMENTARY MUON MAP OF THE SKY.
10. CLUSTERING IN GRANULAR GASES.
9. QUANTUM COMPUTERS PERFORM THEIR FIRST SIMULATION.
5. AIRLINER CONTRAILS.
1. HAVING YOUR PHOTON AND SEEING IT TOO.
8. IMPLEMENTATION OF MOLECULAR SWITCHES.
7. ANTIPROTONS AT SOLAR MAXIMUM.
11. WHY IS THE SAHARA A DESERT?
12. THE MOST POWERFUL FREE-ELECTRON LASER.
6. THE CHANDRA X-RAY TELESCOPE.
13. BLOCH STATES: NOT FOR ELECTRONS ONLY.

CC: jschmidt

S 000181

From: <jak@interport.net>
To: "Jeff Schmidt" <jschmidt@aip.acp.org>
Date: Mon, Jul 19, 1999 3:24 PM
Subject: Re: physics of toys -Reply

Thanks, Jeff. The CHE story that mentioned Turner is where i got the article idea from.

S 000182

Received: from amsterdam.interport.net
([199.184.165.19])
by acpgate.acp.org; Mon, 19 Jul 1999 14:24:37 -0400
Received: from [207.237.106.133] (usrts3p133.port.net [207.237.106.133])
by amsterdam.interport.net (8.8.5/8.8.5) with SMTP id OAA07232
for <jschmidt@aip.acp.org>; Mon, 19 Jul 1999 14:24:44 -0400 (EDT)
Message-Id: <199907191824.OAA07232@amsterdam.interport.net>
Subject: Re: physics of toys -Reply
Date: Mon, 19 Jul 99 14:24:10 -0500
x-sender: jak@pop.interport.net
x-mailer: Claris EMailer 1.1
From: <jak@interport.net>
To: "Jeff Schmidt" <jschmidt@aip.acp.org>
Mime-Version: 1.0
Content-Type: text/plain; charset="US-ASCII"

S 000183

From: Sharon Quarles
To: deyej@aol.com, dk@amo.mit.edu, Dr. James Stith, ...
Date: Tue, Jul 20, 1999 8:30 AM
Subject: Confirmation--PT Advisory Committee Meeting

Dear PT Advisory Committee Members,

This notice serves to confirm that the next Physics Today Advisory Committee will be held on February 28-29, 2000. The meeting will be held in Conference Room A at the American Center for Physics in College Park, Maryland.

The 28th will be an all-day session (8:30am - 4:30pm) with a closed committee dinner in the evening. The 29th will be a morning session (8:30am - 12:00pm.)

I look forward to seeing all of you then. I will keep you abreast of any pertinent information as we move closer to our meeting date. Should you need to contact me beforehand, please feel free to e-mail me or call me at 301-209-3043.

Regards,

Sharon J. Quarles

Sharon J. Quarles
Physics Today & The Industrial Physicist
One Physics Ellipse
College Park, Md. 20740
(301) 209-3043

CC: Kiera Robinson, Margaret Wiley, PT Staff

S 000184

Mail Envelope Properties (37946BE0.51B : 6 : 20912)

Subject: Confirmation--PT Advisory Committee Meeting
Creation Date: Tue, Jul 20, 1999 8:30 AM
From: Sharon Quarles

Created By: ACP.AIP:squarles

Recipients

Post Office ACP.AIP

BRODSKY (Marc Brodsky)
BSCHWARZ CC (Bert Schwarzchild)
CDAY CC (Charles Day)
EPLOTKIN CC (Elliot Plotkin)
GLUBKIN CC (Gloria Lubkin)
JBARKER CC (Judy Barker)
JSCHMIDT CC (Jeff Schmidt)
JSTITH (Dr. James Stith)
KROBINSON CC (Kiera Robinson)
MDSMITH CC (Marian Smith)
MWILEY CC (Margaret Wiley)
PELLIOT CC (Paul Elliot)
RFITZGER CC (Richard Fitzgerald)
RWEHRENB CC (Rita Wehrenberg)
SBENKA CC (Stephen Benka)
TGARY CC (Tonya Gary)
WKORNBBER CC (Warren Kornberg)

Post Office ACP.apsdpost

GOODWIN CC (Irwin Goodwin)

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S 000185

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lj1 (lj1@bell-labs.com)

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Post Office i
tfeder CC (tfeder@wam.umd.edu)

Post Office i
bgl CC (bgl@worldnet.att.net)

Domain.Post Office

ACP.AIP

ACP.apsdpost

i i:amo.mit.edu

i i:aol.com

i i:apl.washington.edu

i i:bell-labs.com

i i:biosun.harvard.edu

i i:cern.ch:maurice

i i:harker.nrl.navy.mil

i i:interport.net

i i:ra.msstate.edu

i i:wam.umd.edu

i i:worldnet.att.net

Route

ACP.AIP

ACP.apsdpost

Files

MESSAGE

Size

1832

Date & Time

Tuesday, July 20, 1999 8:30 AM

Options**Expiration Date:** None**Priority:** Standard**Reply Requested:** No**Return Notification:** None**Concealed Subject:** No**Security:** Standard

S 000186

From: Jeff Schmidt
To: l.mime("jak@interport.net")
Date: Mon, Jul 19, 1999 2:14 PM
Subject: physics of toys -Reply

Hi Jean,

Julius Sumner Miller appeared a number of times during Carson's reign. Some years before that, I think he was Professor Wonderful on one of the big-time (national) children's TV shows. I visited his home in Torrance, California, a city very near Los Angeles (essentially part of L.A.).

I assume you saw the mention of Ray Turner in C.H.E. (16 July 99, page A13).

-- J

CC: jschmidt

S 000187

From: <jak@interport.net>
To: "Jeff Schmidt" <jschmidt@aip.acp.org>
Date: Mon, Jul 19, 1999 12:47 PM
Subject: physics of toys

hi Jeff,

what was the name of the guy in California who used to appear on the Tonight show to demonstrate the physics of toys? i was thinking a photo of him on the show would make a good illustration for whatever article we run.

jean

S 000188

Received: from amsterdam.interport.net
([199.184.165.19])
by acpgate.acp.org; Mon, 19 Jul 1999 11:47:37 -0400
Received: from [207.237.111.119] (arcts2p119.port.net [207.237.111.119])
by amsterdam.interport.net (8.8.5/8.8.5) with SMTP id LAA07692
for <jschmidt@aip.acp.org>; Mon, 19 Jul 1999 11:47:44 -0400 (EDT)
Message-Id: <199907191547.LAA07692@amsterdam.interport.net>
Subject: physics of toys
Date: Mon, 19 Jul 99 11:47:11 -0500
x-sender: jak@pop.interport.net
x-mailer: Claris EMailer 1.1
From: <jak@interport.net>
To: "Jeff Schmidt" <jschmidt@aip.acp.org>
Mime-Version: 1.0
Content-Type: text/plain; charset="US-ASCII"

S 000189

From: Paul Elliott (Paul Elliot)
To: Bschwarz; cday; jschmidt
Date: Wed, Jul 14, 1999 10:50 PM
Subject: Copyediting of Holton, Jaworowski, Bernholc Articles for Sept. Issue

Bert, Chas, Jeff:

I expect to complete the Jaworowski article this Friday (as I have already told Chas), and, according to Bert, the Holton article will be ready for me on my return from vacation on July 27. That being the case, I would expect to finish going through that article by the end of that week and then proceed to work on the Bernholc article, finishing that up as soon as possible on the week beginning August 2.

However, are there any factors--such as authors' availability, editors' availability--that would make it more useful for me to start with the Bernholc article? And are there any other factors likely to have an impact on my working on the two articles?

Cary Hoagland's availability is currently limited, but I will check with her tomorrow to see if we can possibly use her to help with one of the two articles.

Paul

CC: sbenka

S 000190

From: Stephen Benka
To: PT
Date: Thu, Mar 18, 1999 2:52 PM
Subject: Our Interim Publisher

To all PTers,

Our interim publisher will be Gary Squires. He is essentially a consultant, hired by AIP, to look at how we do things and how we might change what we do. He will be here for three to six months, and ultimately will make recommendations to Jim Stith. He is looking at the whole operation: editorial, production, advertising, circulation & fulfillment, marketing, printing, and probably more. He is also charged with helping find our next publisher. He himself is not a candidate and is not interested. I met him briefly last week, and found him to be likeable, bright, and knowledgeable about magazines, though a little weak in association publications, which is where we fit within the industry.

That is all I know. I believe he will start next week, possibly Monday, 22 March.

I encourage all of us to be open and honest with him. I certainly will be. Don't hesitate to tell him what you think is wrong, but don't forget to tell him what you think is right.

--Steve

S 000191

From: Jeff Schmidt
To: MDSMITH
Date: Mon, Feb 22, 1999 4:40 PM
Subject: Exchange - CHE -Reply

Hi Marian --

The editor of the Chronicle of Higher Education is Malcolm Scully, but the managing editor is usually the person who handles things like exchanges; his name is Scott Jaschik. Their office is at 1255 23rd Street NW, Washington, DC 20037. Telephone: 202-466-1000. Fax: 202-452-1033.

Good luck,

Jeff

CC: jschmidt

S 000192

From: Jeff Schmidt
To: APUTNEY
Date: Fri, Feb 19, 1999 1:44 AM
Subject: University of Maryland computer account

Hi Angela --

I use my University of Maryland computer account, and so I'd like to survive the purge.

-- Jeff

Jeff Schmidt
jeff@wam.umd.edu
[REDACTED]

CC: JSCHMIDT

S 000193

From: Jeff Schmidt
To: PELLIOT
Date: Mon, Feb 22, 1999 4:17 PM
Subject: "Purge"

Hi Paul,

Thanks for forwarding the message about the upcoming computer account "purge." Actually, I did get a copy of that message directly, and in response I sent Angela a message asking not to be purged.

These purges, like the easily removable name plates on our offices, the frequent memos listing people "deleted" from the company phone directory and a host of other now-normal practices serve the new order well by reminding us of our expendability. Insecurity -- what a great motivational tool!

Hope to talk to you soon,

Jeff

CC: jschmidt

S 000194

From: Jeff Schmidt
To: l.mime("sgranick@uiuc.edu")
Date: Mon, Feb 1, 1999 3:06 PM
Subject: Re: Physics Today article -Reply -Reply -Reply

Hi Steve,

Sorry about the unresponsive bureaucracy. My inquiries after your 29 January message have prompted the editor, Steve Benka, to promise to call you with an update; perhaps he has already done so. From the little that I could find out, I would guess that your article is simply waiting in line for attention, and that once it gets that attention it will move forward along the usual path of revision and publication.

So I am afraid that I must ask you again to let me know if you don't hear anything within about a week.

Jeff

CC: jschmidt

S 000195

Received: from plano.sff.net (plano.greyware.com [207.55.146.51])
by pol.wam.umd.edu (8.9.0.Beta6/8.9.0.Beta6) with SMTP id
XAA26677;

Tue, 8 Dec 1998 23:21:39 -0500 (EST)

Received: from gpc (unverified [199.174.184.185]) by plano.sff.net
(EMWAC SMTPRS 0.83) with SMTP id <B0001125366@plano.sff.net>;

Tue, 08 Dec 1998 22:19:36 -0600

Message-ID: <B0001125366@plano.sff.net>

X-Sender: gpc@pop.sff.net

X-Mailer: QUALCOMM Windows Eudora Pro Version 4.0

Date: Tue, 08 Dec 1998 23:19:24 -0500

To: jak@interport.net, jeff@wam.umd.edu, tfeder@wam.umd.edu,
lugenbold@juno.com

From: "Graham P. Collins" <gpc@sff.net>

Subject: Human rights petitions

Mime-Version: 1.0

Content-Type: text/plain; charset="us-ascii"

Status:

X-Mozilla-Status: 0005

Content-Length: 4468

FYI...

Despite the "from" line, the place to forward your forms to is
lebowitz@math.rutgers.edu

The info is also online at <ftp://math.rutgers.edu/pub/smm/Human.Rights.html>

You should be able to access that OK using Netscape, but note the "ftp"
prefix.

-- Graham

Date: Tue, 8 Dec 1998 14:56:12 -0500 (EST)

From: Yael Goldberg <ygoldber@math.rutgers.edu>

Message-Id: <199812081956.OAA12249@math.rutgers.edu>

To: stat-mech-mtg@math.rutgers.edu

Subject: A message from Joel Lebowitz

CORRECTION TO FINAL REMINDER: 80TH STATISTICAL MECHANICS CONFERENCE
AND A SYMPOSIUM IN HONOR OF HARRY FRISCH'S 70TH BIRTHDAY
RUTGERS UNIVERSITY, HILL CENTER, ROOM 114
SUNDAY THROUGH TUESDAY, DECEMBER 13-15, 1998

Dear Colleague:

The address of our web site where all information resides was
given
incorrectly in the previous message. It should be:

<ftp://math.rutgers.edu/pub/smm>

Also the human rights page on the web did not contain all the petitions. I
am therefore repeating the response form, as well as a second page which

S 000196

contains draft copies of all four petitions. They will all be written respectfully to the appropriate people.

IF YOU HAVE NOT YET DONE SO, PLEASE HELP OUR COLLEAGUES BY RETURNING THIS FORM WITH YOUR ENDORSEMENT

Name _____ Affiliation _____

I support the U.N. Declaration of Human Rights _____

I support petitions to China _____, Ethiopia _____, Mexico _____, Serbia _____

I would like more information about supporting CCS _____

Other Comments:

With all best wishes,

Joel

Professor Joel L. Lebowitz
Center for Mathematical Sciences Research
Rutgers, The State University of New Jersey
110 Frelinghuysen Road
Piscataway, NJ 08854-8019

lebowitz@math.rutgers.edu
FAX: 732-445-4936
PHONE: 732-445-3117/3923

Draft Outlines of Petitions

To the Chinese Authorities:

We want to express our great concern about the arrests of physicist Wang Youcai, engineer Lin Hai, and others in connection with their attempt to organize an opposition party. We are also concerned about the continued imprisonment of other students and professionals (list attached) for the peaceful petitions to the government asking for democratic reforms.

We appeal to you as a great country to respect the U.N. Declaration of Human Rights of which China is a signatory, and to release all those imprisoned for peaceful activities.

To the Ethiopian Authorities:

We write out of heightened concern for our colleague the physician

S 000197

Asrat Woldeyes. We are distressed to learn that Dr. Asrat's physical condition has worsened to a point where it has reached crisis proportions.

As scientists concerned with the protection and advancement of human rights we urge Ethiopia to free our ailing colleague who is imprisoned for the peaceful expression of his beliefs.

To the Mexican Authorities:

We write to register our distress over developments affecting academics during the past seven months in the State of Chiapas. Some examples that have come to our attention recently include the maltreatment of Professor Sergio Valdes Ruvalcaba, a 60-year-old professor at the Universidad Autonoma Metropolitana, arrested along with eight others on 11 April, 1998; the arrest and beating of a student from the Centro de Antropologia Social del Sureste on May 5, 1998.

These arrests, beatings and harassments are serious violations of international human rights norms. As scientists and people concerned with the protection and advancement of the human rights we urge the Mexican Government to call a halt to these assaults on researchers in Chiapas, and release all persons still detained.

To Yugoslavian and Serbian Authorities:

We write to you to protest the law enacted by the Serbian Parliament in May 1998, which gives the government the right to unilaterally appoint all officers of the university who in turn can hire and fire faculty and staff without any justification. This law was clearly designed to curb any expression of opposition to government policies and has so been implemented.

We strongly urge you to repeal this law and restore the rights of faculty and students.

S 000198

Received: from astor.interport.net (astor.interport.net [199.184.165.18])
by po0.wam.umd.edu (8.9.0.Beta6/8.9.0.Beta6) with ESMTP id
IAA08208;
Wed, 9 Dec 1998 08:27:16 -0500 (EST)
Received: from interport.net (jak@park.nfs.interport.net [205.161.144.2])
by astor.interport.net (8.8.5/8.8.5) with ESMTP id IAA10307;
Wed, 9 Dec 1998 08:28:21 -0500 (EST)
Received: from localhost (jak@localhost)
by interport.net (8.8.5/8.8.5) with SMTP id IAA16856;
Wed, 9 Dec 1998 08:27:09 -0500 (EST)
Date: Wed, 9 Dec 1998 08:27:08 -0500 (EST)
From: JEAN KUMAGAI <jak@interport.net>
To: "Graham P. Collins" <gpc@sff.net>
cc: jeff@wam.umd.edu, tfeder@wam.umd.edu, lugenbold@juno.com
Subject: Re: Human rights petitions
In-Reply-To: <B0001125366@plano.sff.net>
Message-ID: <Pine.GSO.3.96.981209082556.16804A-100000@interport.net>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII
Status:
X-Mozilla-Status: 0015
Content-Length: 124

what a coincidence! i was planning to go to the meeting on monday, so i
guess i'll sign the petitions there.
--jean

S 000199

From: Paul Elliott (Paul Elliot)
To: JBARKER, SBENKA, JKUMAGAI, WKORNER, TFEDER, BSCHW...
Date: Wed, Oct 21, 1998 4:35 pm
Subject: Tech Transfer Society Oct 22 Brown Bag Luncheon -Forwarded

CC: cday,rfitzger

S 000200